

BRADYGLO[™]

EMERGENCY EGRESS MARKING HANDBOOK

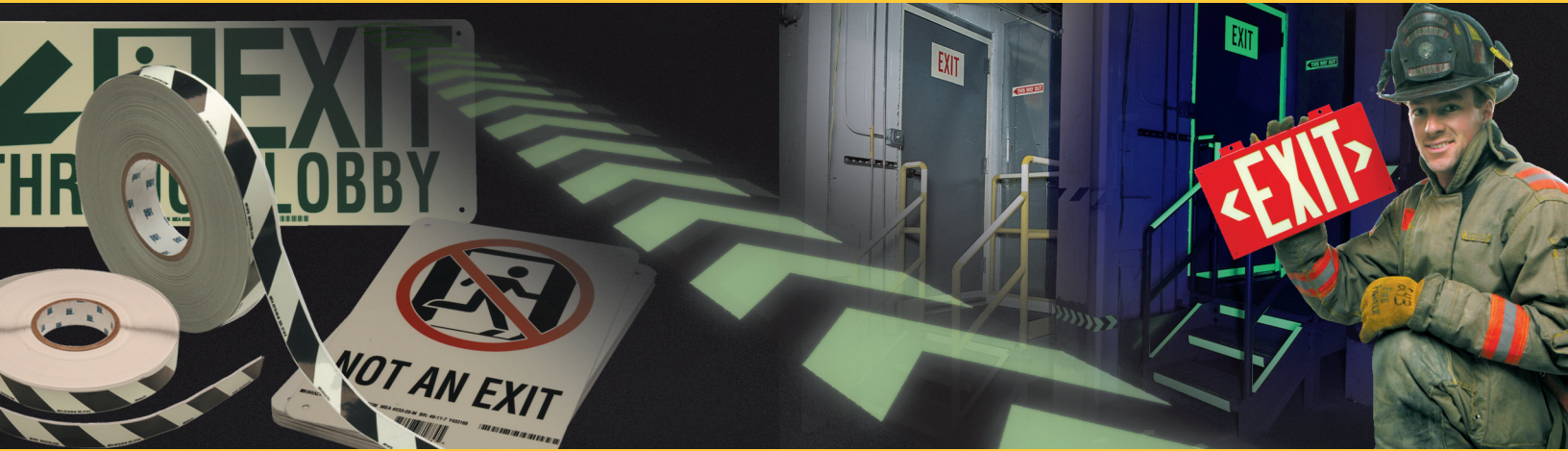


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Handbook Introduction

In 2009, the International Building Code (IBC), the International Fire Code (IFC) and the National Fire Protection Association (NFPA) 101 Life Safety Code were significantly updated to include new provisions for means of egress path, or emergency exit route, safety markings and anti-slip stair materials. These provisions, combined with the increasingly popular global initiative for sustainable green building, have left many questions about today's rapidly changing safety standards and requirements.

Brady Worldwide, Inc. designed this handbook to help professionals educate themselves about the new egress regulations. With highlighted code provisions and simplified regulation explanations, it is a must-have resource for understanding how both new construction and pre-existing buildings should be modified in order to comply with the 2009 provisions.¹

This handbook also explains how egress systems can help builders earn credits for the Leadership in Energy and Environmental Design's (LEED®²) Green Building Rating System. It outlines the procedures for obtaining LEED certification and informs consumers about the many incentives and cost-savings opportunities for using green emergency egress products.

About Brady Worldwide, Inc.

Brady Worldwide, Inc., one of the nation's leading providers of emergency egress products and solutions, has more than 90 years of experience in developing, engineering and manufacturing safety markings and egress equipment. For more information about the 2009 emergency egress code revisions, LEED® egress solutions or Brady's emergency egress products, visit www.bradyid.com/bradyglo or call 1-888-250-3082.

The entire industry is affected by the 2009 code provisions, including:

- Building owners
- Developers
- Architects
- Engineers
- Maintenance managers
- Facility manager
- And more



¹ The contents of this handbook provide a summary of selected provisions from the 2009 IFC, IBC and NFPA 101 codes. Consult with the IFC, IBC and NFPA for complete details.

² LEED is a registered trademark of the U.S. Green Building Council.

2009 International Building Code and International Fire Code

In order to protect the health, safety and welfare of communities large and small, the industry adheres to a system of model codes that regulate the construction of residential and commercial buildings. These codes are created by the International Code Council (ICC), a membership association dedicated to building safety and fire prevention. The International Building Code (IBC) and International Fire Code (IFC) are two of the most widely accepted codes in North America; all 50 states have adopted a version of the IBC and at least 42 states have adopted a version of the IFC.

To ensure the regulations remain up-to-date, the ICC revises the codes every three years to include new and innovative design ideas and technologies, modern materials and methods of construction, and current approaches to fire safety, life safety and structural stability. In 2009, the ICC introduced the latest editions of the IBC and IFC, both of which contained significant code changes and additions, particularly in regards to the means of egress.

More than half of the states are expected to adopt the 2009 IBC code by 2010.

The 2009 IBC defines a means of egress as “a continuous and unobstructed path of vertical and horizontal egress travel from any occupied portion of a building or structure to a public way.” A means of egress consists of three separate and distinct parts: the exit access, the exit and the exit discharge.

IBC/IFC Egress Regulations:³

The 2009 IBC and IFC state that luminous egress path markings shall be required in all new and existing institutional, educational, business, hotel, public assembly and R-1 residential buildings having occupied floors that are located more than 75 feet above the lowest level of fire department vehicle access (generally 5+ stories or floor levels). According to the tenth chapter of the IBC and IFC, luminous markings are required for all doors, steps, landings, handrails, perimeters, and obstacles.

The IBC and IFC regulations are enforced by building inspectors and fire code officials. Buildings are put on notice if they do not conform, and then given a reasonable amount of time to bring the facilities up to code. If they fail to meet regulations by the designated timeline, buildings are subject to fines and penalties. Additionally, the risk of liability exposure increases dramatically if an unfortunate incident occurs in a building that has not conformed to the required codes.

Affected Occupancy Groups:

- Assembly (A) (For Public Events)
- Business (B)
- Education (E)
- Hospitality/Hotels (R-1)
- Institutional/Hospital (I)
- Mercantile (M)

Exempted Occupancy Groups:

- Factory and Industrial
- High Hazard
- Utility
- Residential other than R-1

³ This handbook highlights a selection of egress regulations from the 2009 IFC and 2009 IBC. For a complete list of provisions, consult with the IFC and IBC.

IBC Section 1024: Luminous Egress Path Markings

“Approved luminous egress path markings delineating the exit path shall be provided in buildings of groups A, B, E, I, M and R-1 having occupied floors located more than 75 feet (22.9 m) above the lowest level of fire department vehicle access in accordance with Sections 1024.1 through 1024.5.”

IFC Section 4604.23: Egress Path Markings

“Existing buildings of groups A, B, E, I, M and R-1 having occupied floors located more than 75 feet (22.9 m) above the lowest level of fire department vehicle access shall be provided with luminous egress path markings in accordance with Section 1024.”

Occupancy Groups:

A	Assembly-type Buildings
B	Business
E	Educational
I	Institutional
M	Mercantile
R-1	Residential occupancies containing <i>sleeping units</i> where the occupants are primarily transient in nature, including hotels, motels and boarding houses.

Path Markings within Exit Enclosure (Section 1024.2)

“Egress path markings shall be provided in all exit enclosures, including vertical exit enclosures and exit passageways, in accordance with Sections 1024.2.1 through 1024.2.6.”

Steps, Landings and Handrails: All steps, landings and handrails throughout the egress paths must be marked with solid and continuous stripes of luminous (photoluminescent, glow-in-the-dark) material. The stripes need to be applied to the full length of each step, landing edges and handrail in order to meet code specifications (Sections 1024.2.1 – 1024.2.3).

Perimeter Demarcation Lines: Stair landings and other floor areas with exit enclosures (except sides of steps) must have solid and continuous luminous demarcation lines on the floor, walls or combination of the two (Sections 1024.2.4.1-3).

Obstacles: All obstacles throughout the egress path that are at or below 6 feet 6 inches in height and project more than 4 inches into the egress path must be outlined with a marking pattern that alternates equal bands of luminescent and black material (Section 1024.2.5).

Doors from Exit Enclosures: If a door in an exit enclosure is passed through in order to complete the egress path, it must have the following markings (Section 1024.2.6):

1. **Emergency Exit Symbol:** A low-location luminous emergency exit sign must be mounted on the door, centered horizontally.
2. **Door Hardware Markings:** Door hardware must be marked with luminous material either behind, immediately adjacent to or on the door handle and/or escutcheon.
3. **Door Frame Markings:** The top and sides of the door frame must be marked with a solid and continuous stripe of luminescent material. (The stripe may be located on the wall surrounding the frame if the molding does not have sufficient flat surface.)

The 2009 IBC defines an exit enclosure as “an exit component that is separated from other interior spaces of a building or structure by fire-resistance-rated construction and opening protectives, and provides for a protected path of egress travel in a vertical or horizontal direction to the exit discharge or the public way.”

Path Marking Uniformity (Section 1024.3)

“Placement and dimensions of markings shall be consistent and uniform throughout the same exit enclosure.”

Self-luminous and Photoluminescent Material (Section 1024.4)

“Luminous egress path markings shall be permitted to be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminance.”

Illumination (Section 1024.5)

“Exit enclosures where photoluminescent exit path markings are installed shall be provided with the minimum means of egress illumination required by Section 1006 for at least 60 minutes prior to periods when the building is occupied.”

Illumination Required: The means of egress must be illuminated at all times the building space is occupied (Section 1006.1).

Illumination Level: In general, the means of egress illumination level shall not be less than 1 foot-candle (11 lux) at the walking surface. Exceptions are made for auditoriums, theaters, concert halls and similar assembly occupancies (Section 1006.2).

Directional Signage (Section 1007.10)

Direction signage that indicates the location of other means of egress must be provided at elevator landings, areas of refuge, and at all exits that serve a required accessible space that does not have an approved accessible means of egress.



Exit Signs (Section 1011)

Exits and exit access doors must be marked with an approved exit sign that is readily visible from any direction of egress travel. In cases where the exit or the path of egress travel is not immediately visible to the occupants, the exit signs must clearly indicate the direction of egress travel. Intervening doors within exits also need to be marked by exit signs. Exit signs must be placed at points that are no more than 100 feet (or the listed viewing distance for the sign – whichever is less) from the nearest visible exit sign (Section 1011.1).

Exceptions:

1. Exit signs are not required in rooms or areas that require only one exit or exit access.
2. Where approved by the building official, main exterior exit doors or gates that are obviously and clearly identified as exits do not need exit signs.
3. Exit signs are not required in dayrooms, sleeping rooms or dormitories in occupancies in Group I-3.
4. Exit signs are not required in occupancies in Group U and individual sleeping units or dwelling units in Group R-1, R-2, or R-3.
5. In occupancies in Groups A-4 and A-5, exit signs are not required on the seating side of vomitories or openings into seating areas if exit signs are readily apparent from the vomitories. Egress lighting must be provided to identify each vomitory in an emergency.

Illumination: Exit signs must be internally or externally illuminated (except for tactile signs required by Section 1011.3) (Section 1011.2).

Tactile Exit Signs: A tactile sign stating “EXIT” and complying with ICC A117.1 must be provided adjacent to each door to an area of refuge, an exterior area for assisted rescue, an exit stairway, an exit ramp, and exit passageway and the exit discharge (Section 1011.3).

Internally Illuminated Exit Signs: Electrically powered, self-luminous and photoluminescent exit signs must be listed and labeled in accordance with UL 924 and installed in accordance with the manufacturer’s instructions and Chapter 27. Exit signs must be illuminated at all times (Section 1011.4).

Externally Illuminated Exit Signs: Externally illuminated exit signs must comply with the following regulations:

Graphics (Section 1011.5.1): The letters on an exit sign must be at least six inches high with principal letter at least 3/4 inch wide. The letters in the word “EXIT” must be at least two inches wide (with the exception of the letter “I”) and spaced at least 3/8 inch apart. The word “EXIT” must be highly contrasted with the background and clearly discernible when the sign illumination is not energized.

Exit Sign Illumination (Section 1011.5.2): The face of the exit sign illuminated from an external source must have an intensity of at least 5 foot-candles.

Power Source (Section 1011.5.3): Exit signs must be illuminated at all times. Unless the sign can provide continuous illumination for at least 90 minutes without being connected to an external power source, the sign must be connected to an emergency power system (storage batteries, unit equipment, on-site generator) in case of primary power loss.



Floor Identification Signs (Section 1022.8)

Every floor landing in exit enclosures that connect more than three stories must have signage designating:

- The floor level
- The terminus of the top and bottom of the exit enclosure
- The identification of the stair or ramp
- The story of and direction to the exit discharge
- The availability of roof access from the enclosure (for the fire department)

The sign must be 5 feet above the floor landing and readily visible when the doors are open or closed. Floor level identification signs in tactile characters complying with ICC A117.1 must be at each floor level landing adjacent to the door leading from the enclosure into the corridor.

Signage Requirements: Stairway identification signs must meet the following requirements (Section 1022.8.1):

1. The size of the sign must be at least 18 inches by 12 inches.
2. Letters identifying the stair enclosure must be at least 1½ inches in height.
3. The floor level number must be located in the center of the sign and at least 5 inches in height.
4. All other lettering and numbers must be at least 1 inch in height.
5. Characters must contrast with their background. Both the characters and the background must have a non-glare finish.
6. When signs required by Section 1022.8 are installed in interior exit enclosures of buildings subject to Section 1024, the signs must be made of the same materials as required by Section 1024.4.



Other Important Code Sections Impacting the 2009 Egress Regulations Include*:

Section 1006 – Means of Egress Illumination
Section 1008 – Doors, Gates and Turnstiles
Section 1009 – Stairways
Section 1010 – Ramps
Section 1011 – Exit Signs
Section 1012 – Handrails
Section 1013 – Guards
Section 1022 – Exit Enclosures
Section 1022.8 – Floor Identification Signs
Section 1030 – Maintenance of the Means of Egress

**While chapter 10 of the 2009 IFC states that all the above regulations only apply to new building construction, chapter 46 (section 4604.23) confirms that existing 75-foot and taller buildings of Groups A, B, E, I, M and R-1 must have the luminous egress path markings specified in Section 1024.*

2009 National Fire Protection Association 101: Life Safety Code

To protect the lives of building occupants in the event of a fire, the industry has established several construction codes and standards intended to minimize the possibility and effects of fire and other risks. These codes are created by the National Fire Protection Association (NFPA), identified as the world's largest and most influential fire safety organization.

The NFPA's Life Safety Code, also known as the NFPA 101, is another benchmark for occupant fire safety in both new and pre-existing structures. It provides advanced regulations for sprinklers, alarms, egress, emergency lighting, smoke barriers, special hazard protection, and other features required to reduce the loss of life from fire, including smoke, fumes, or panic.

Similar to the IBC and IFC, the NFPA 101 is updated every three years to include the latest research, technological advances and industry developments in relation to fire safety. The latest version of the NFPA 101, which was released in 2009, contains a number of significant provisions regarding the means of egress.

Virtually every building, process, service, design and installation in the industry today is affected by NFPA documents.

The Life Safety Code is one of 300 codes and standards created by the NFPA to minimize the possibility and effects of fire and other risks.

2009 NFPA 101 Egress Regulations⁴

The 2009 NFPA 101: Life Safety Code includes new criteria for the complete marking of steps, handrails and door hardware. Revised standards also apply for the remoteness of exit accesses and exit discharges, intended to reduce the possibility of both paths becoming blocked by a single fire.

The NFPA 101 is enforced by inspectors, zoning boards, fire marshals and other industry officials. The code applies to existing structures as well as new structures. When a code revision is adopted into local law, existing structures have a grace period before they must comply.



⁴ This handbook highlights a selection of egress regulations from the 2009 NFPA 101 Life Safety Code. For a complete list of provisions, consult with the NFPA.

Section 7.2 Means of Egress Components

Door Openings (Section 7.2.1)

Signage on the stair door leaves must meet the following requirements:

- Door assemblies allowing re-entry must be identified as such on the stair side of the door leaf.
- Door assemblies not allowing re-entry must be marked with a sign on the stair side indicating the location of the nearest door opening that allows re-entry or exit in each direction of travel.

Stairs (Section 7.2.2)

New enclosed stairs serving three or more stories and existing enclosed stairs serving five or more stories must comply with the following means of egress signage regulations

(Section 7.2.2.5.4.1 - A through M):

- Special signage within the enclosure at each floor landing that indicates the floor level. The floor level number must be in the middle of the sign in minimum 5 inch high numbers and in accordance with ICC/ANSI A117.1. Mezzanine and basement levels shall be marked with “M,” “B” or other appropriate identification letters preceding the floor number (A, B, H, L).
- Signage indicating the finishing point of the top and bottom of the stair enclosure (C).
- Signage indicating the identification of the stair enclosure, with the stairway identification letter at the top of the sign in minimum 1 in. high lettering (D, J).
- Signage indicating the floor level of, and the direction to, exit discharge (E).
- Signage that reads “NO ROOF ACCESS” and is located under the stairway identification letter designating stairways that do not provide roof access (K).
- All signage inside the enclosure must be approximately 60 inches above the floor landing in a position that is visible when the door is in an open or closed position (F).
- The signage should be painted or stenciled on the wall or on a separate sign securely attached to the wall (I).
- Identification of the lower and upper terminus of the stairways must be located at the bottom of the sign in minimum 1 inch high letters or numbers (M).

Wherever an enclosed stair requires travel in an upward direction to reach the level of exit discharge, special signs with directional indicators showing the direction to the level of exit discharges shall be provided at each floor level landing from which upward direction of travel is required

(Section 7.2.2.5.4.2).

Egress stair signage
must also comply with
sections 7.10.8.1 and 7.10.8.2
of the NFPA 101.



Stairway Tread Marking (Section 7.2.2.5.4.3)

Where new contrasting marking is applied to stairs, such marking must comply with the following:

- The marking must include a continuous strip as a coating on, or as a material integral with, the full width of the leading edge of each tread and each landing nosing.
- The marking strip width, measured horizontally from the leading vertical edge of the nosing, must be 1 inch to 2 inches and consistent at all nosings.

When new contrast marking is provided for stairway handrails, it must be applied to, or be part of, at least the upper surface of the handrail, have a minimum width of ½ inch, and extend the full length of each handrail. After marking, the handrail must comply with 7.2.2.4.4.

Exit Stair Path Markings (Section 7.2.2.5.5)

Wherever exit stair path markings are required by NFPA 101 in Chapters 11-43, the markings must be installed in accordance with the following regulations (7.2.2.5.5.1 through 7.2.2.5.5.11).

Exit Stair Treads (Section 7.2.2.5.5.1): Exit stair treads must have a marking stripe

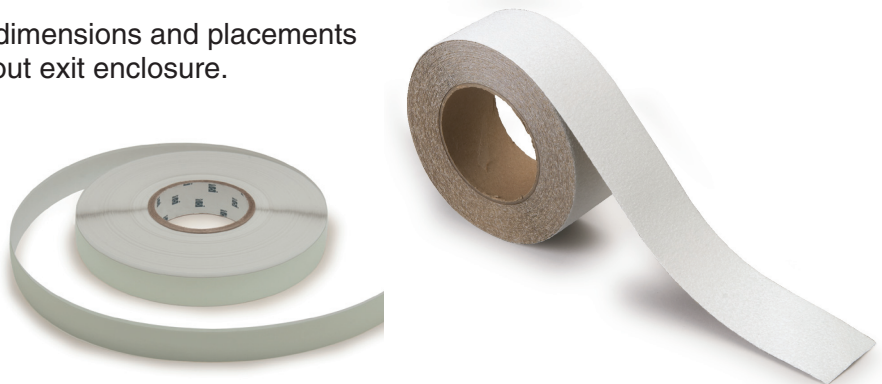
applied as a paint/coating (or a material that is integral with the nosing of each step) along the step's horizontal leading edge throughout the full width of the step. The marking stripe must meet the following requirements:

- Located no more than ½ inch from the leading edge of each step without overlapping the leading edge by more than ½ inch down the vertical face of the step.
- Minimum horizontal width of 1 inch and maximum width of 2 inches.
- Uniform and consistent dimensions and placements on each step throughout exit enclosure.
- Surface-applied marking stripes using adhesive-backed tapes are prohibited.

Exit Stair Landings (Section 7.2.2.5.5.2): The leading edge of exit stair landings must be marked with a solid and continuous marking stripe consistent with the dimensional requirements for stair treads and must be the same length as, and consistent with, the stripes on the steps.

Exit Stair Handrails (Section 7.2.2.5.5.3) : All handrails and handrail extensions must be marked with a solid and continuous marking stripe that meets the following requirements:

- Applied to the upper surface of the handrail (or be a material integral with the upper surface of the handrail) for the entire length of the handrail, including extensions.
- Minimum horizontal width of 1 inch.
- Uniform and consistent dimensions and placements on all handrails throughout exit enclosure.



Perimeter Demarcation Markings (Section 7.2.2.5.5.4): Stair landings, exit passageways and other parts of the floor areas within the exit enclosure must have a solid or continuous perimeter demarcation marking stripe on the floor. The marking stripe must meet the following requirements:

- Minimum horizontal width of 1 inch and maximum width of 2 inches (interruptions can not exceed 4 inches).
- Must be within 2 inches of wall.
- Must continue in front of all door openings swinging into exit enclosure (not necessary in front of door openings discharging from the exit enclosure).
- Uniform and consistent dimensions and placements throughout exit enclosure.
- Surface-applied marking stripes using adhesive-backed tapes are prohibited.

Obstacles (Section 7.2.2.5.5.5): Obstacles that are in the exit enclosure at or below 6 feet 6 inches in height, and that project more than 4 inches into the egress path, must be identified with markings that meet the following requirements:

- At least 1 inch in horizontal width comprised of a pattern of alternating equal band of luminescent material and black that are less than 2 inches in horizontal width and angled at 45 degrees.

Doors Serving Exit Enclosures (Section 7.2.2.5.5.6)

All doors serving the exit enclosures that swing out from the enclosure in the direction of egress travel must have a marking stripe on the top and sides of the door(s) frame(s). The marking stripe must meet the following requirements:

- Minimum horizontal width of 1 inch and a maximum width of 2 inches.
- Gaps shall be permitted in the continuity of door frame markings where a line is fitted into a corner or bend, but must be as small as practicable, and in no case shall gaps be greater than 1 inch.

Door Hardware Marking (7.2.2.5.5.7)

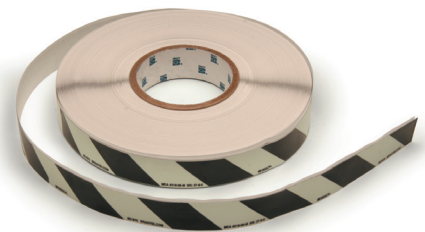
The hardware on the doors in the exit enclosure that swing out from the enclosure in the direction of egress travel must have a marking stripe that meets the following requirements:

- All door hardware that is necessary to release the latch must be outlined with a marking stripe having a minimum horizontal width of 1 inch.
- Where panic hardware is installed, the marking stripe must have a minimum horizontal width of 1 inch and be applied to the entire length of the actuating bar or touch pad, without interfering with the view of any instructions on the actuating bar or touch pad.

Emergency Exit Symbol (Section 7.2.2.5.5.8)

An emergency exit symbol with a luminescent background must be applied on all doors serving the exit enclosure that swing out from the enclosure in the direction of egress travel. The emergency exit symbol must meet the following requirements:

- Compliance with NFPA 170 – Standard for Fire Safety and Emergency Symbols.
- Applied on the door no higher than 18 inches above the finished floor.



Uniformity (Section 7.2.2.5.5.9)

Placement and dimensions of the marking stripes must be consistent and uniform throughout the exit enclosure.

Materials (Section 7.2.2.5.5.10)

Exit stair path markings can be made of any material, including paint, provided that an electrical charge is not required to maintain the required luminescence. Such materials include, but are not limited to, self-luminous materials and photoluminescent materials. Materials must comply with one of the following:

- ASTM E 2073 – Standard Test Method for Photopic Luminance of Photoluminescent Markings (some exceptions apply)
- UL 1994 – Standard for Luminous Egress Path Marking Systems
- An alternative standard deemed equivalent and approved by the authority having jurisdiction

Exit Stair Illumination (Section 7.2.2.5.5.11)

Exit enclosures where photoluminescent materials are installed must be continuously illuminated for at least 60 minutes prior to periods when the building is occupied. Light control devices that automatically turn exit enclosure lighting on and off, based on occupancy, shall not be installed.

Section 7.10 Marking Means of Egress

Mounting Location (Section 7.10.1.9)

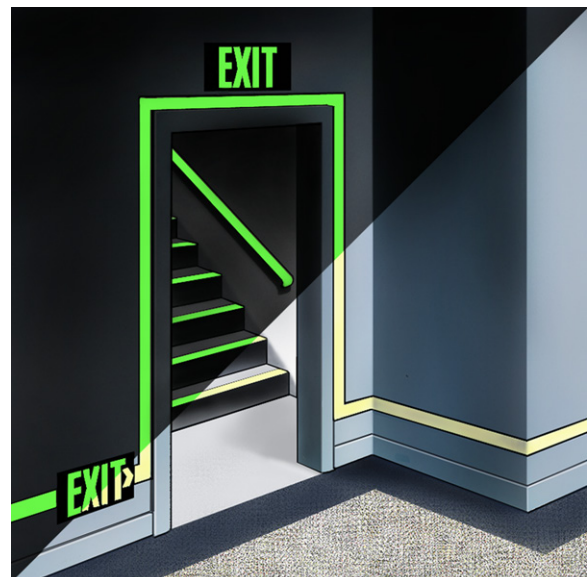
The bottom of new egress markings must be located at a vertical distance of less than 6 feet 8 inches above the top edge of the egress opening intended for designation by that marking. Egress markings must be located at a horizontal distance of no more than the required width of the egress opening.

Listing (Section 7.10.7.1)

Internally illuminated signs, other than approved existing signs, or existing signs having the required wording in legible letters at least 4 inches high, must be listed in accordance with UL 924 – Standard for Safety Emergency Lighting and Power Equipment.

Photoluminescent Signs (Section 7.10.7.2)

The face of a photoluminescent sign must be continually illuminated while the building is occupied in accordance with its listing. The charging illumination must be a reliable light source as determined by the authority having jurisdiction. The charging light source shall be of a type specified in the product markings.



Section 7.10.8 Special Signs

No Exit (Section 7.10.8.3)

Any door, passage or stairway that is neither an exit nor a way of exit access and that is located or arranged so that it is likely to be mistaken for an exit must be identified by a No Exit sign.

- The sign must read as followed: NO
EXIT
- The “NO EXIT” sign must have the word “NO” in letters 2 inch high, with a stroke width of $\frac{3}{8}$ inch, and the word “EXIT” in letters 1 inch high, with the word “EXIT” below the word “NO,” unless such sign is an approved existing sign.

Elevator Signs (Section 7.10.8.4)

Elevators that are a part of a means of egress (see 7.2.13.1) must have the following signs with a minimum letter height of $\frac{5}{8}$ inch posted in every elevator lobby:

- Signs that indicate that the elevator can be used for egress, including any restrictions on use
- Signs that indicate the operational status of elevators.

Evacuation Diagram (Section 7.10.8.5)

Where a posted floor evacuation diagram is required in NFPA 101 Chapters 11-43, floor evacuation diagrams reflecting the actual floor arrangement and exit locations must be posted and oriented in a location and manner acceptable to the authority having jurisdiction.

Other Important Code Sections Impacting the 2009 Egress Regulations Include:

Section 7.1 – General

Section 7.3 – Capacity of Means of Egress

Section 7.4 – Number of Means of Egress

Section 7.5 – Arrangements of Means of Egress

Section 7.6 – Measurement of Travel Distance to Egress

Section 7.7 – Discharge from Exits

Section 7.8 – Illumination of Means of Egress

Section 7.9 – Emergency Lighting

Section 7.11 – Special Provisions for Occupancies with High Hazard Concerns

Section 7.12 – Mechanical Equipment Rooms, Boiler Rooms and Furnace Rooms



LEED® Green Building

Internationally recognized as the industry benchmark for green construction, LEED® is a voluntary certification program that provides building owners and operators a concise framework for identifying and implementing practical and measurable green building design, construction, operations and maintenance solutions. LEED promotes a whole-building approach to sustainability that can be applied to any building type at any building lifecycle phase.

LEED Key Performance Areas:

- Sustainable Sites
- Water Savings
- Energy Efficiency
- Materials Selection
- Indoor Environmental Quality

In addition to the environmental benefits of green building, this type of construction can also yield a number of economic benefits as well. Comprehensive green building projects can actually lower the costs of project development, infrastructure and materials. Energy- and water-efficient buildings are able to significantly reduce their operating costs; those buildings with aggressive and well-integrated green design concepts are often able to cut their energy and water use to less than half than that of a traditional building.

LEED® Credits for Photoluminescent Exit Signs

Photoluminescent (glow-in-the-dark) exit signs are a product option that can contribute to earning LEED credit points, while creating a safer egress environment for building projects. Installation costs are exceptionally low, and even more importantly, photoluminescent exit signs support sustainable building objectives.

Non-electrical and non-radioactive, photoluminescent exit signs have a longer lifespan than traditional exit signs, and consume zero energy because they use ambient light to charge their glow. They require fewer building materials and less maintenance, combining for a much more attractive exit sign option than the traditional LED or Tritium exit signs.

Due to its many environmental paybacks, the use of photoluminescent exit signs can earn buildings a number of points in the following LEED credits:

- **EA Credit 1 – Energy and Atmosphere: Optimizing Energy Performance**
- **ID Credit 1 – Innovation in Design: Significant Environmental Benefits**

EA Credit 1 – Energy and Atmosphere: Optimizing Energy Performance

Worth Up to 10 LEED® Credit Points

To earn points for the EA Credit 1, a building project must demonstrate incremental energy efficiency improvements above the required baseline criteria, which is typically specified in ASHRAE/IESNA Standard 90.1 or the “Basis Criteria and Prescriptive Measures” of the Advanced Buildings Benchmark. If a building project requires less energy than the minimums that these baseline guidelines require, it will receive the subsequent amount of LEED points.

The current LEED® guidelines are based on the use of conventional LED exit signs, which, at best, require approximately 5 watts of power per sign. If photoluminescent exit signs are installed instead of LED signs, they absorb ambient light during normal business hours and use this light energy to glow brightly when the lights go out, so the operating electrical cost is virtually eliminated. While 5 watts of power may seem trivial, the energy use adds up very quickly over time, especially in large building projects with hundreds of exit signs on 24 hours a day, 7 days a week. With photoluminescent exit signs, building projects can eliminate thousands of electric power watts each year – a significant difference that yields positive LEED calculations for the energy efficiency of the project.

ID Credit 1 – Innovation in Design: Significant Environmental Benefits

According to the LEED® Rating Systems, the ID Credit 1 is intended to reward design teams and projects for:

1. Exception performance above the requirements set by the LEED Green Building Rating System.
2. Innovative performance in green building categories not specifically addressed by LEED.

Photoluminescent exit signs can contribute to points earned for the second criteria because the environmental benefits of the signs span throughout the project's entire lifecycle – from design and procurement to construction, operations and decommissioning. Photoluminescent exit signs provide the following environmental benefits throughout the lifecycle of a building project:

Energy Efficiency - Photoluminescent exit signs absorb ambient light and use this light energy to glow when the lights go out. They require zero energy to operate, successfully saving energy throughout their entire time of use.

Less Building Material Requirements – Photoluminescent exit signs do not need wires, switches and other metal parts that are required for the installation and operation of electric-powered exit signs. This reduces the project's amount of building materials, and hence reduces harmful activities to the environment.

Non-Toxic Construction – Unlike LED and Tritium exit sign, photoluminescent signs do not contain any toxic or hazardous components. LED exit signs' circuit boards and battery back-up packs are considered "universal wastes" by the EPA and Tritium exit signs are mandated by the Nuclear Regulatory Agency for their radioactivity. Both LED and Tritium exit signs have regulations on how they can be disposed of due to their environmental hazards. Photoluminescent exit signs are not regulated in any way because they are primarily made from recycled aluminum and do not contain any radioactive material.

How to Obtain LEED® Certification⁵

To earn LEED certification, a building project must fulfill the prerequisites for basic green building and earn the necessary levels of performance points in the five key areas of human and environmental health: sustainable site development, water savings, energy efficiency, indoor environmental quality and materials selection.

LEED® Certification Steps:

1. **Project Goals:** Examine the building owner's commitment, budget and desire for LEED certification. Determine which level of LEED certification the building project is aimed for, and develop goals based on the desired level.
2. **Registration:** Register the building project with the U.S. Green Building Council (USGBC) to receive the orientation materials. It is highly recommended to register the building project during the pre-design phase. (Registration fee required.)
3. **Strategy Development:** Develop a strategy for the building project's certification based on credit categories and project capabilities. Using the USGBC's Reference Guide and Credit Rulings as a resource, determine the level of implementation and the credit categories to be pursued. Review the online certification procedures and tutorials for a LEED project, and find the answers to any LEED prerequisite and credit rating system questions.
4. **Certification and Documentation:** Complete the application for certification and submit the application to be reviewed. Application review can take anywhere from six weeks to several months. There are several opportunities for response and appeal throughout the application review process (administrative, preliminary technical and final technical reviews).

LEED® Certification Levels

- Certified: 26-32 points
- Silver: 33-38 points
- Gold: 39-51 points
- Platinum: 52-69 points

⁵ This handbook presents a summary of the LEED certification process. For complete details on how to obtain LEED certification, contact the U.S. Green Building Council.

YOUR BRADYGLO™ SOLUTION



Brady offers a wide variety of BradyGlo™ Safety Signs and Accessories including over 175 legends in the BradyGlo 10+ hour photo-luminescent sign material. Our signs are designed for safety instructions and egress during power outages and emergency situation.

Brady also offer BradyGlo™ Tapes (striped, solid, v-style, and arrow style), anti-skid tape, exit signs and emergency evacuation maps.

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