Balco’s IllumiTread™ product line is designed to provide an intuitive glow-in-the-dark route for emergency exits from commercial buildings. These effective systems are charged by a variety of light sources and emit the charge as a glow when the lights go out, promoting a safe and speedy path of egress for occupants and ingress for first responders, entirely eliminating the need for (and cost of) electric routing systems. The IllumiTread™ products are built for efficiency, quality and longevity, making them collectively the perfect egress solution.

All markings are IBC & IFC code compliant.
In 1993, one event provided a sobering realization that electrical lighting was insufficient for providing illuminated emergency exit strategies during catastrophes. During the World Trade Center bombing, the emergency lighting system was damaged, losing its link to the emergency power supply, and impeding the egress of occupants. It became evident that egress routes needed to be designated with markings that did not rely on external power sources. Consequently, in the late 1990’s, the World Trade Center was one of the first facilities to install a photoluminescent (PL), or “glow-in-the-dark,” egress system.

In 2001, the 9/11 World Trade Center attack put the new PL system to the real test. The fortunate evacuees of the twin towers listed the PL markings as one of the top three things that helped them exit the buildings safely. It was 9/11 that proved they were critical components in an effective egress system and helped initiate a number of code requirements.

Rising to the need, Balco developed and launched a brand-new product line in 2005 called IllumiTread™. Born out of extensive research and rigorous testing, Balco led the industry in photoluminescent wayfinding products to provide the construction industry with the best solution for PL egress systems.
Quality photoluminescent (PL) egress markings are essential for evacuation paths when the objective is safety. Decisions that could put egress systems at risk should be strictly avoided. While the goal to keep the total cost of a construction project as low as possible is important, it can sometimes come at the compromise of safety and expense of liability. Effective PL products must be able to withstand the rigors of wear over time, retaining the ability to charge and glow powerful enough to guide occupants’ emergency escape as well as first responders’ navigation into a building, all at a moment’s notice. Additionally, an egress system must stand up to the highest of building codes and performance standards, all without breaking the bank. Learn why Balco’s IllumiTread™ line is the best egress safety solution.

Testing Performance

- Exceeds IBC/IFC code requirements
- Passes UL 1994 and/or ASTM E2072
- Listed with UL for both interior and exterior applications (withstanding UV exposure without compromising luminescent properties)
- Charged by variety of light sources (natural and artificial, including severe lighting conditions [LEDs])
- Photoluminescence maintains illumination for minimum of 90 min. when charged with 1 foot-candle [11 lux] for 60 min.
- Passes salt spray resistance per ASTM B117
- Passes toxicity test per SMP 800C
- Passes flame spread test per ASTM D635
- Nonradioactive per ASTM D3648
- Meets ADA guidelines for slip resistance
- Contributes to LEED® credits
## High Visibility

Consistent quality due to controlled manufacturing environment

## Maintains High Visibility Over Time

Longevity tested to last more than 25 years

## Withstand Step Wear & Damage

High quality and long lasting

## Easy to Clean

Dirt can easily be wiped away

## Cost-Effective

Various profile options to meet project needs and budget

## Slip-Resistant

Designed to maximize resistance to slippage

## Slip-Resistant Under Wet Conditions

Abrasive provides significant performance even when wet

## Code-Compliant

Performance tested prior to every shipment

### IllumiTread™ Stair Nosings

- Consistent quality due to controlled manufacturing environment
- Longevity tested to last more than 25 years
- High quality and long lasting
- Dirt can easily be wiped away
- Various profile options to meet project needs and budget
- Designed to maximize resistance to slippage
- Abrasive provides significant performance even when wet
- Performance tested prior to every shipment

### Stair Nosings w/ Abrasive PL Filler*

- PL strip alone does not provide slip resistance
- Very few products are able to maintain slip-resistance under wet conditions
- Perfect for demarcation along walls and on handrails

### PL Strip

- Tape easily wears down, peels away, rips, scratches or becomes irreversibly grimy (see photos, right)

### Abrasive Tape*

- Abrasive PL tape is extremely difficult to keep clean and therefore code-compliant

### PL Tape

- Tape is ideal for smooth, clean surfaces like walls and handrails
- Tape is not intended or recommended for steps and areas of foot traffic as it will wear down quickly

### Paint*

- Consistent luminance is difficult to achieve due the number of variables that must be controlled in field environment (mix and thickness)
- PL paint is challenging to apply properly in field due to several application factors: substrate conditions, proper cleaning and use of primers (see photos, right)

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*Not offered by Balco
### COMPLETE EGRESS SOLUTION

Balco Offers All Products Required by Code

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SECTION 1025 - LUMINOUS EGRESS PATH MARKINGS

1025.2.1 Steps & 1025.2.2 Landings:
- DXH-330-PL-100, P-3310-PL-100, R-300-PL-100 & R-315P-PL-100 (Cast-in & Blockout Stair Nosings)
- 4120, 8120 & RS-405L-PL-100, RS-405LP-PL-100 (Retrofit/Surface-mount Stair Nosings)

1025.2.3 Handrails:
- 4010C (Aluminum Strip w/ End Caps)
- PLFA-100-H (Tape)

1025.2.4 Perimeter demarcation lines:
- 4211C (Aluminum Strip)
- PLTS-100 (Threshold)
- PLFA-100-H (Tape; Applied to Wall Only)

1025.2.5 Obstacles:
- PLFA-100-OB (Tape)

1025.2.6 Doors within the exit path:
- 4211C (Aluminum Strip)
- PLFA-100-H (Tape)
- 1500-1524, 1529-1532, 1545-1554 (Signage and Markers)

1025.4 Self-luminous and photoluminescent:
- ALL components UL 1994 listed and/or ASTM E 2072 compliant

SECTION 1023 - INTERIOR EXIT STAIRWAYS AND RAMPS

1023.9 Stairway identification signs:
- 1560 (Floor ID Sign)

Additional Codes

- IllumiTread™ product line meets all code requirements of NYC 2014 Construction Code, Chapter 10 Means of Egress, Section BC 1024
- IllumiTread™ product line meets all code requirements of NFPA 101 (Life Safety Code®) and of NFPA 5000 (Building Construction and Safety Code®), Section 7.2.5.5 (also see OSHA Standard 1910 Subpart E - Means of Egress)

NOTE: Be sure to check your local state & county codes.
SECTION 1025 - LUMINOUS EGRESS PATH MARKINGS

1025.1 General.
Approved luminous egress path markings delineating the exit path shall be provided in high-rise buildings of Group A, B, E, I-1, M, and R-1 occupancies in accordance with this section.

Exception: Luminous egress path markings shall not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1028.1, Exception 1.

1025.2 Markings within exit components.
Egress path markings shall be provided in interior exit stairways, interior exit ramps and exit passageways, in accordance with Sections 1025.2.1 through 1025.2.6.

1025.2.1 Steps.
A solid and continuous stripe shall be applied to the horizontal leading edge of each step and shall extend for the full length of the step. Outlining stripes shall have a minimum horizontal width of 1 inch (25 mm) and a maximum width of 2 inches (51 mm). The leading edge of the stripe shall be placed not more than ⅜ inch (12.7 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by not more than ¼ inch (12.7 mm) down the vertical face of the step.

Exception: The minimum width of 1 inch (25 mm) shall not apply to outlining stripes listed in accordance with UL 1994.

1025.2.2 Landings.
The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.

1025.2.3 Handrails.
Handrails and handrail extensions shall be marked with a solid and continuous stripe having a minimum width of 1 inch (25 mm). The stripe shall be placed on the top surface of the handrail for the entire length of the handrail, including extensions and newel post caps. Where handrails or handrail extensions bend or turn corners, the stripe shall not have a gap of more than 4 inches (102 mm).

Exception: The minimum width of 1 inch (25 mm) shall not apply to outlining stripes listed in accordance with UL 1994.

1025.2.4 Perimeter demarcation lines.
Stair landings and other floor areas within interior exit stairways, interior exit ramps and exit passageways, with the exception of the sides of steps, shall be provided with solid and continuous demarcation lines on the floor or on the walls or a combination of both. The stripes shall be 1 to 2 inches (25 mm to 51 mm) wide with interruptions not exceeding ⅝ inches (102 mm).

Exception: The minimum width of 1 inch (25 mm) shall not apply to outlining stripes listed in accordance with UL 1994.

1025.2.4.1 Floor-mounted demarcation lines.
Perimeter demarcation lines shall be placed within 4 inches (102 mm) of the wall and shall extend to within 2 inches (51 mm) of the markings on the leading edge of landings. The demarcation lines shall continue across the floor in front of all doors.

Exception: Demarcation lines shall not extend in front of exit discharge doors that lead out of an exit and through which occupants must travel to complete the exit path.

1025.2.4.2 Wall-mounted demarcation lines.
Perimeter demarcation lines shall be placed on the wall with the bottom edge of the stripe not more than 4 inches (102 mm) above the finished floor. At the top or bottom of the stairs, demarcation lines shall drop vertically to the floor within 2 inches (51 mm) of the step or landing edge. Demarcation lines on walls shall transition vertically to the floor and then extend across the floor where a line on the floor is the only practical method of outlining the path. Where the wall line is broken by a door, demarcation lines on walls shall continue across the face of the door or transition to the floor and extend across the floor in front of such door.

Exception: Demarcation lines shall not extend in front of exit discharge doors that lead out of an exit and through which occupants must travel to complete the exit path.

1025.2.4.3 Transition.
Where a wall-mounted demarcation line transitions to a floor-mounted demarcation line, or vice-versa, the wall-mounted demarcation line shall drop vertically to the floor to meet a complimentary extension of the floor-mounted demarcation line, thus forming a continuous marking.

1025.2.5 Obstacles.
Obstacles at or below 6 feet 6 inches (1981 mm) in height and projecting more than 4 inches (102 mm) into the egress path shall be outlined with markings not less than 1 inch (25 mm) in width comprised of a pattern of alternating equal bands, of luminous material and black, with the alternating bands not more than 2 inches (51 mm) thick and angled at 45 degrees (0.79 rad). Obstacles

Applicable Occupancy Groups:
- A - Assembly
- B - Business
- E - Educational
- I-1 - Institutional
- M - Mercantile
- R-1 - Transit Residential

1025.2.1 Steps & 1025.2.2 Landings:
- 001-100-PL-100, P-100-PL-100, R-300-PL-100 & R-315P-PL-100 (Cast-in & Blockout Stair Nosings)
- 4120, 8120 & RS-405L-PL-100, RS-405LP-PL-100 & R-315P-PL-100 (Cast-in & Blockout Stair Nosings)

1025.2.3 Handrails:
- 404C (Aluminum Strip w/ End Caps)
- PLFA-900-H (Tape)

1025.2.4 Perimeter demarcation lines:
- 421C (Aluminum Strip)
- PLFS-100 (Threshold)
- PLFA-100-H (Tape, Applied to Wall Only)
shall include, but are not limited to, standpipes, hose cabinets, wall projections, and restricted height areas. However, such markings shall not conceal any required information or indicators including but not limited to instructions to occupants for the use of standpipes.

1025.2.6 Doors within the exit path.
Doors through which occupants must pass in order to complete the exit path shall be provided with markings complying with Sections 1025.2.6.1 through 1025.2.6.3.

1025.2.6.1 Emergency exit symbol.
The doors shall be identified by a low-location luminous emergency exit symbol complying with NFPA 170. The exit symbol shall be not less than 4 inches (102 mm) in height and shall be mounted on the door, centered horizontally, with the top of the symbol not higher than 18 inches (457 mm) above the finished floor.

1025.2.6.2 Door hardware markings.
Door hardware shall be marked with not less than 16 square inches (406 mm²) of luminous material. This marking shall be located behind, immediately adjacent to, or on the door handle or escutcheon. Where a panic bar is installed, such material shall be not less than 1 inch (25 mm) wide for the entire length of the actuating bar or touchpad.

1025.2.6.3 Door frame markings.
The top and sides of the door frame shall be marked with a solid and continuous 1-inch- to 2-inch-wide (25 mm to 51 mm) stripe. Where the door molding does not provide sufficient flat surface on which to locate the stripe, the stripe shall be permitted to be located on the wall surrounding the frame.

1025.3 Uniformity.
Placement and dimensions of markings shall be consistent and uniform throughout the same enclosure.

1025.4 Self-luminous and photoluminescent.
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. Such materials shall include, but not be limited to, self-luminous* materials and photoluminescent materials. Materials shall comply with either of the following standards:

1. UL 1994.
2. ASTM E 2072, except that the charging source shall be a footcandle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 30 millicandelas per square meter at 10 minutes and 5 millicandels per square meter after 90 minutes.

1025.5 Illumination.
Where photoluminescent exit path markings are installed, they shall be provided with not less than 1 footcandle (11 lux) of illumination for not less than 60 minutes prior to periods when the building is occupied and continuously during the building occupancy.

... SECTION 1023 - INTERIOR EXIT STAIRWAYS AND RAMPS

1023.9 Stairway identification signs.
A sign shall be provided at each floor landing in an interior exit stairway and ramp connecting more than three stories designating the floor level, the terminus of the top and bottom of the interior exit stairway and ramp and the identification of the stairway or ramp. The sign shall state the story of and direction to the exit discharge, and the availability of roof access from the interior exit stairway and ramp for the fire department. The sign shall be located 5 feet (1524 mm) above the floor landing in a position that is readily visible when the doors are in the open and closed positions. In addition to the stairway identification sign, a floor-level sign in visual characters, raised characters and braille complying with ICC A117.1 shall be located at each floor-level landing adjacent to the door leading from the interior exit stairway and ramp into the corridor to identify the floor level.

1023.9.1 Signage requirements.
Stairway identification signs shall comply with all of the following requirements:

1. The signs shall be a minimum size of 18 inches (457 mm) by 12 inches (305 mm).
2. The letters designating the identification of the interior exit stairway and ramp shall not be less than 11/2 inches (38 mm) in height.
3. The number designating the floor level shall be not less than 5 inches (127 mm) in height and located in the center of the sign.
4. Other lettering and numbers shall be not less than 1 inch (25 mm) in height.
5. Characters and their background shall have a nonglare finish. Characters shall contrast with their background, with either light characters on a dark background or dark characters on a light background.
6. Where signs required by Section 1023.9 are installed in the interior exit stairways and ramps of buildings subject to Section 1025, the signs shall be made of the same materials as required by Section 1025.4.
IBC & IFC Typical Stairwell Egress Markings

- Maximum acceptable gap between handrail markers (at bends & turns): 4” Max
- Minimum acceptable distance from wall for obstruction markers: 4” Min
- Minimum acceptable height from floor for obstruction markers: 6’9” Min
- Minimum acceptable distance of demarcation from the wall: 4” Min
- Acceptable distance of 10” signage from floor: 5’
- Acceptable distance of identification signage from floor: 5’
- Acceptable distance of demarcation from leading edge of landing: 0” Min to 2” Max
- Entire step edge must be marked
- Acceptable distance of demarcation and leading edge of landing: 0” Min to 2” Max
- Acceptable gap between demarcation and leading edge of landing: 0” Min to 2” Max
- Acceptable gap between handrail markers (at bends & turns): 4” Max
- Acceptable height of sign from top to floor: 18” Max
- Acceptable distance of PL from step edge: 0” Min to 1/2” Max
- Acceptable gap between handrail markers (at bends & turns): 4” Max
- Acceptable gap between demarcation and leading edge of landing: 0” Min to 2” Max

Handrail Strips
Stair Nosing
Door Signage
Obstruction Strips
Directional Signage
Identification Signage
Demarcation Strips

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