

# ***IllumiTread™***

Photoluminescent Egress Solutions

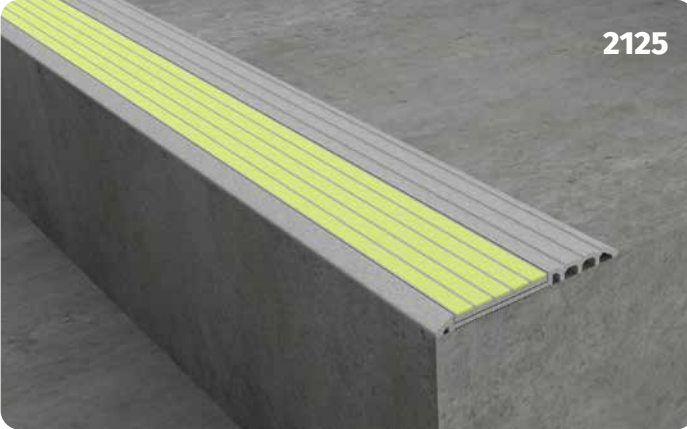
**2022  
New York City Building Code  
Compliance Guide**



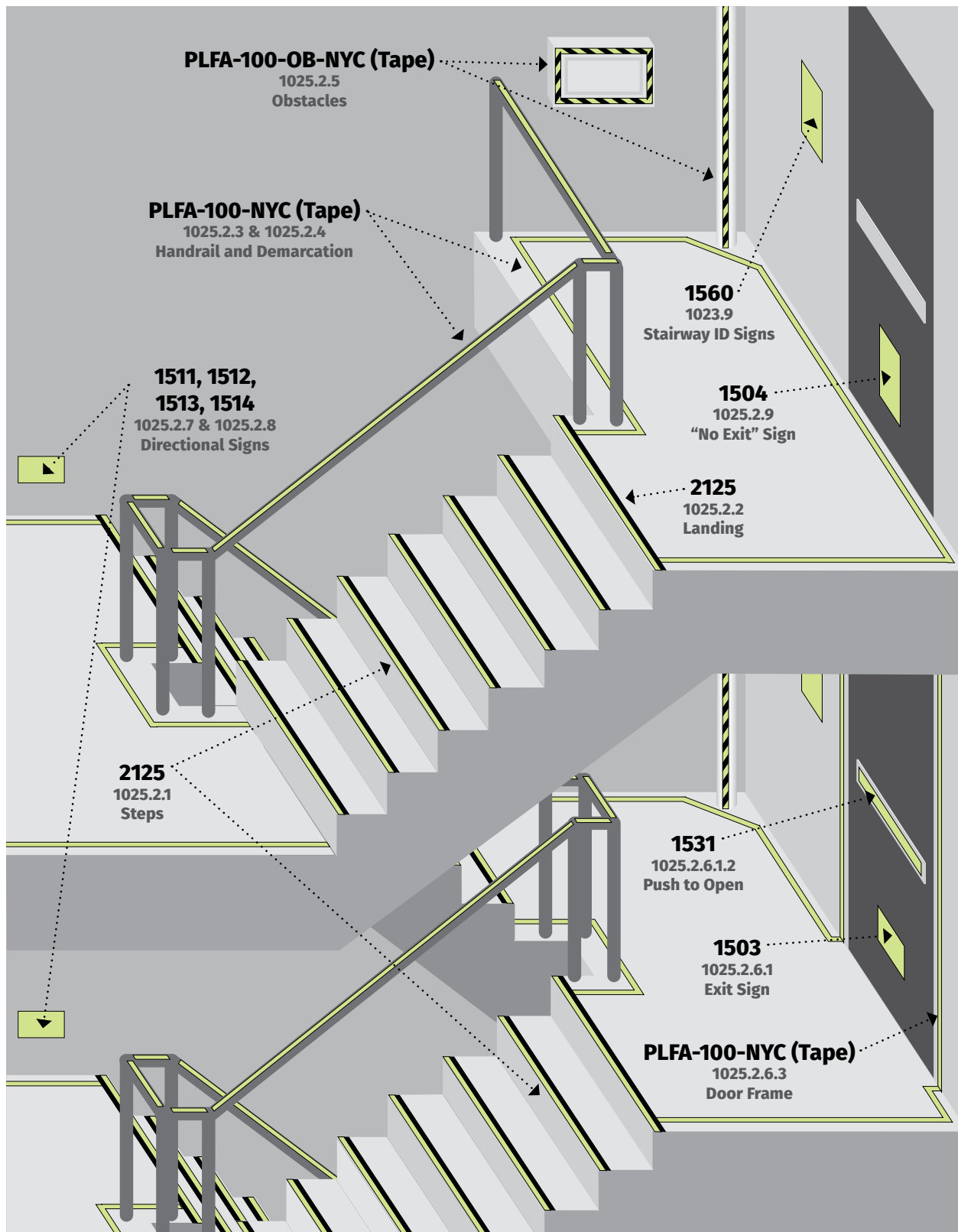
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# ***IllumiTread™***

## **NYC Code Required PL Markings**



# Egress Stairwell





# 2022 New York City Building Code Compliance Guide

## SECTION 1025 - LUMINOUS EGRESS PATH MARKINGS

### 1025.1 General

Approved luminous egress path markings delineating the exit path shall be provided in all high-rise buildings subject to Section 403.5 having occupied floors located more than 75 feet (22 860 mm) above the lowest level of Fire Department vehicle access in accordance with Sections 1025.1 through 1025.9.

#### Exceptions:

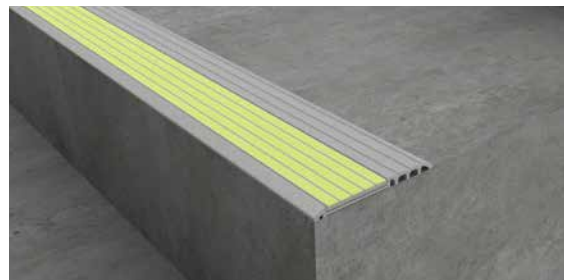
1. Luminous egress path markings shall not be required on the level of exit discharge in lobbies that serve as part of the exit path in accordance with Section 1028.1, Exception 1.
2. In open parking garages, luminous egress path markings shall not be required in open exit stairways serving only the open parking garage, and areas of open parking garages that serve such part of the exit path.
3. Luminous egress path markings shall not be required on egress paths serving Residential Group 2 (R-2).

### 1025.2 Required Markings

Egress path markings shall be provided in interior exit stairways, interior exit ramps and exit passageways, in accordance with Sections 1025.2.1 through 1025.2.9. Entrances to interior exit stairways, interior exit ramps and exit passageways shall be provided with exit signs in compliance with Section 1025.2.6.1.

#### 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 (25.4 mm) and a maximum width of 2 inches (50.8 mm). The leading edge of the stripe shall be placed not more than 1/2 inch (12.7 mm) from the leading edge of the step and the stripe shall not overlap the leading edge of the step by more than 1/2 inch (12.7 mm) down the vertical face of the step. Outlining stripes on steps shall comply with Figure S101.1(2) in Appendix S.



#### 1025.2.1 Steps & 1025.2.2 Landings:

- 2125 (Retrofit/Surface-mount Stair Nosings) – 5'

**Exception:** The minimum width of 1 inch (25.4 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. Stripes on landings shall comply with Figure S101.1(3) in Appendix S.

### 1025.2.3 Handrails

Handrails and handrail extensions shall be marked with a solid and continuous stripe having a minimum width of 1 inch (25.4 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 (101.6 mm). Stripes on handrails shall comply with Figure S101.1(4) in Appendix S.



**Exception:** The minimum width of 1 inch (25.4 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 (25.4 mm to 50.8 mm) wide with interruptions not exceeding 4 inches (101.6 mm).

**Exception:** The minimum width of 1 inch (25.4 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 (101.6 mm) of the wall and shall extend to within 2 inches (50.8 mm) of the markings on the leading edge of landings. The demarcation lines shall continue across the floor in front of all doors. Perimeter demarcation lines shall comply with Figure S101.1(5) in Appendix S.



#### Exceptions:

1. 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.
2. Demarcation lines shall be continuous but need not extend into an area such as a dead end or an obstruction that is selected not to be outlined because it is not part of the egress 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 (101.6 mm) above the finished floor. At the top or bottom of the stairs, demarcation lines shall drop vertically to the floor within 2 inches (50.8 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. Wall-mounted demarcation lines shall comply with Figure S101.1(8) in Appendix S.



**Exceptions:**

1. 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.
2. Perimeter demarcation lines are not required on the sides of steps.
3. Perimeter demarcation lines are not required where an area such as a dead end or an obstruction is selected not to be outlined because it is not part of the egress path, the demarcation lines shall not be required in such area provided that a demarcation line is continuous across the floor.

**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 complementary extension of the floor-mounted demarcation line, thus forming a continuous marking. Transitioning demarcation lines shall comply with Figure S101.1(7) in Appendix S.

**1025.2.5 Obstacles**

Obstacles at or below 6 feet 6 inches (1981.2 mm) in height and projecting more than 4 inches (101.6 mm) into the egress path shall be outlined with markings not less than 1 inch (25.4 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 (50.8 mm) thick and angled at 45 degrees (0.79 rad). Obstacles 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. Markings on obstacles shall comply with Figure S101.1(6) in Appendix S.

**1025.2.5 Obstacles:**

- PLFA-100-OB-NYC (Tape) – 100' roll

**1025.2.6 Doors within the Exit Path**

Doors through which occupants must pass in order to complete the exit path, and doors serving horizontal exits, shall be provided with markings complying with Sections 1025.2.6.1 through 1025.2.6.3 of this chapter and Figures S101.1(11) and S101.1(12) in Appendix S. Exit discharge doors shall further comply with Section 1025.2.6.1.2.

**1025.2.6.1 Emergency Exit Symbol**

The doors shall be identified by a low-location luminous emergency exit symbol complying with Section 1025.6.1. The exit symbol shall be not less than 4 inches (101.6 mm) in height and shall be mounted on the door itself in accordance with Section 1025.2.6.1.1. Such signs shall be no higher than 18 inches (457.2 mm) above the finished floor.

**1025.2.6.1 Emergency Exit Symbol:**

- 1503 (Signage)

**1025.2.6.1.1 Mounting Location**

The vertical centerline of the sign shall be centered with the door, or shall be in that half of the door, either the right or left, that contains the latch. In case of double-doors, both doors shall be marked and the signs shall be centered with the doors. Arrows may be omitted on door-mounted signs. Door-mounted signs shall comply with Figure S101.1(1) in Appendix S.

#### 1025.2.6.1.2 Exit Discharge Doors

At doors serving as exit discharge, a sign in compliance with Section 1025.2.6.1.1 shall contain supplemental directional text such as “FINAL EXIT,” “EXIT THROUGH LOBBY,” or “EXIT TO STREET” in sans serif letters one-half as high as the word EXIT. Exit discharge door sign shall comply with Figure S101.1(13) in Appendix S.

#### 1025.2.6.2 Door Hardware Markings

Door hardware shall be marked with not less than 16 square inches (0.01 m<sup>2</sup>) 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 not be less than 1 inch (25.4 mm) wide for the entire length of the actuating bar or touchpad. Additional hardware markings may include ANSI Z 535.1 safety green graphics such as arrows indicating door handle turning directions, or emergency egress symbols as per NFPA 170, the word “EXIT,” the word “PUSH,” and similar egress-related symbols, provided the minimum 16 square inches (0.01 m<sup>2</sup>) of luminous materials is maintained.

#### 1025.2.6.3 Door Frame Markings

The top and sides of the door frame shall be marked with a solid and continuous 1- to 2-inch (25.4 mm to 50.8 mm) wide 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.

#### 1025.2.7 Directional Signage Upon Entering an Interior Exit Stairway or Ramp

Luminous directional signs designed in compliance with Section 1025.6.1 shall be placed in the interior exit stairway or ramp at every entrance thereto such that they are readily visible when the doors are in the open and closed positions. Such directional sign shall include an arrow indicating the direction of travel. The word “EXIT” shall not be required. The signs shall be located such that their top edge is within 18 inches (457.2 mm) above the finished floor. Directional signs shall comply with Figure S101.1(9) in Appendix S.



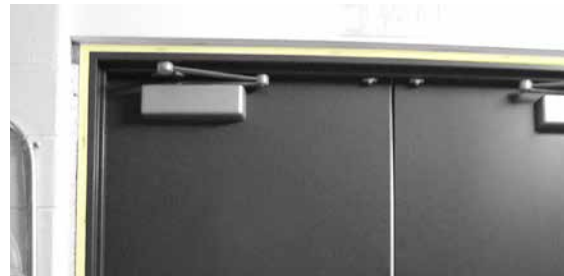
#### 1025.2.6.1.2 Exit Discharge Doors:

- 1501 (Signage)

PUSH TO OPEN

#### 1025.2.6.1.2 Door Hardware Markings:

- 1531 (Signage)



#### 1025.2.6.3 Door Frame Markings:

- PLFA-100-NYC (Tape) – 100' roll



#### 1025.2.7 Directional Signage Upon Entering an Interior Exit Stairway or Ramp:

- 1511, 1512, 1513, 1514 (Signage)

### 1025.2.8 Directional Signage at Transfer Levels and Where Egress Direction Is Not Clear

Luminous directional signs designed in compliance with Section 1025.6.1 and installed at heights indicated in Section 1025.2.7 shall be placed on the wall at transfer levels and wherever egress direction is not clear; including at turns along horizontal extensions, at transitions from vertical to horizontal direction and at a “T” intersection. These directional signs shall include arrows indicating the direction of travel. The word “EXIT” shall not be required. Directional signs at transfer levels shall comply with Figure S101.1(9) in Appendix S.

### 1025.2.9 “No Exit” Sign

Luminous signs shall be placed on doors along the egress path that lead to dead ends (mechanical rooms, storage closets, etc.). Such signs shall contain sans serif lettering at least 1 inch (25.4 mm) high reading “NO EXIT,” with the “NO” centered above the “EXIT.” The “NO” may be a larger size than the “EXIT” for clarity. The nonluminous portion of such signs shall not be green. No-exit signs shall comply with Figure S101.1(10) in Appendix S.



## 1025.3 Uniformity

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

### 1025.3.1 Solid and Continuous

For the purposes of this section, solid and continuous means without gaps or interruption, except as required for the control of expansion and contraction. A series of dashes, chevrons, dots, or other similar patterns is not solid and continuous. Luminous materials shall be considered solid and continuous if they occasionally contain the following safety green (ANSI Z 535.1) symbols or text:

1. The word “EXIT”;
2. Egress symbol as per NFPA 170;
3. Direction arrows as per NFPA 170; or
4. Other text or symbols as approved by the commissioner.

## 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 1 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 millicandelas per square meter after 90 minutes.



### 1025.4 Self-luminous and Photoluminescent:

- ALL components UL 1994 listed and/or ASTM E 2072 compliant

\*Note: Most “self-luminous” products (typically used in exit signs like the ones above doors) are radioactive, which Balco does not make. The photoluminescent products Balco does make (i.e. IllumiTread™ PL Strip) are non-radioactive.

#### **1025.4.1 Labeling**

All approved materials shall be labeled and identified with the manufacturer's name, model number and the name of the approved agency in a minimum of 6 point type with at least one such identification on each piece of material installed. However, labeling is not required for pieces of material less than 1 foot (304.8 mm) in length that are placed in immediate proximity of an identical model that is labeled. Materials may include supplemental identifying information such as the trade name or "NYC."

### **1025.5 Reserved**

### **1025.6 General Standards**

Luminous materials shall comply with the design standards of Sections 1025.6.1 and 1025.6.2.

#### **1025.6.1 Design of Door and Directional Signs**

Unless otherwise specified, all photoluminescent door signs and directional signs:

1. May be either positive or negative image;
2. Shall be made with the non-photoluminescent portions of the signs in safety green as per ANSI Z535.1; and
3. Shall include three components:
  - 3.1. The word "EXIT" printed in sans serif letters at least 4 inches high (101.6 mm) with strokes no less than 1/2 inch (12.7 mm);
  - 3.2. An emergency exit symbol at least 4 inches high (101.6 mm), complying with NFPA 170; and
  - 3.3. An arrow at least 23/4 inches (69.9 mm) high, complying with NFPA 170.

Design of door and directional sign shall comply with Figures S101.1(9), S101.1(13), S101.1(14) and S101.1(15) in Appendix S.

##### **1025.6.1.1 Additional Text for Sign Subject to This Section**

Additional descriptive text is permitted, provided such words are in sans serif letters and, where the word "EXIT" or the emergency symbol is required on such sign, such a descriptive text is no more than one-half as high as the word "EXIT" or the emergency exit symbol.

#### **1025.6.1 Figures**

The figures in Appendix S are intended only for illustration, and where there is a conflict between the figures and this section, this section shall govern.

### **1025.7 Voluntary Installation**

Where luminous egress path markings are not required but are voluntarily installed in the exit path, such markings shall comply with Section 1025.

### **1025.8 Special Inspection**

Luminous exit path markings shall be subject to special inspection in accordance with Sections 1025.8.1 through 1025.8.3.

#### **1025.8.1 Inspection**

A registered design professional shall verify by visual inspection that all components have been installed in accordance with Section 1025, both with the normal lighting turned on and with the normal and emergency lighting turned off.

#### **1025.8.2 Product Identification**

A registered design professional shall review the manufacturer product literature and information from the testing agency and verify that the products installed are labeled as meeting the standards in Section 1025.4. The registered design professional shall verify which particular products were installed in which parts of the building.

### **1025.8.3 Paints**

Where in situ painting was utilized, a registered design professional shall field-verify that the specified paint was utilized in accordance with the manufacturer recommended methods of application.

### **1025.9 Maintenance Program**

Owners shall keep the required luminous egress path markings in good repair. At a minimum, owners shall, every 12 months, perform a visual inspection of the markings with the normal lighting turned on. Markings that are missing, damaged, loose, or that show signs of wear or missing labels shall be noted and promptly repaired. The log of such inspections, including the results and any corrective measures taken, shall be kept and maintained on the premises for inspection by the department and the Fire Department. The log shall contain the date of inspection and the printed name and signature of the person performing the inspection.**1025.4.1**

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## **SECTION 1023 - INTERIOR EXIT STAIRWAYS AND RAMPS**

### **1023.9 Stairway Identification and Floor Level Signs**

Signs identifying stairways shall comply with Section 1023.9.1. Signs identifying floor levels shall comply with Sections 1023.9.2 through 1023.9.5.

#### **1023.9.1 Stairway Identification Signs**

A stairway identification sign indicating each stair by alphabetic letter shall be posted on both sides of each stair door. The alphabetic letters designating the identification of the interior exit stairway and ramp shall be not less than 3 inches (76.2 mm) in height. Such sign shall comply with Items 2, 5 and 6 of Section 1023.9.4.

#### **1023.9.2 Floor Identification Signs**

A floor identification sign shall be provided at each floor landing in an interior exit stairway and ramp connecting more than three stories. Such sign shall designate:

1. The floor level;
2. The terminus of the top and bottom of the interior exit stairway and ramp;
3. The identification of the interior exit stairway and ramp;
4. The story of the exit discharge; and
5. The availability of roof access from the interior exit stairway and ramp for the Fire Department.

#### **1023.9.3 Accessible Floor Level Identification Signs**

Floor level identification signs in visual characters, raised characters and braille complying with ICC A117.1 shall be located at each floor level landing adjacent to the door on the stair side.

#### 1023.9.4 Signage Requirements

Floor identification signs required by Section 1023.9.2 shall comply with all of the following requirements:

1. The signs shall be a minimum size of 18 inches (457.2 mm) by 12 inches (304.8 mm).
2. The top of the signs 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.
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 (25.4 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 luminous materials as required by Section 1025.4.



**1023.9 Stairway Identification and Floor Level Signs:**  
• 1560 (Floor ID Sign)

#### 1023.9.5 Directions to Openable Doors

Where doors serving interior exit stairways are locked on the stair side, signage shall be posted in compliance with Sections 1031.4.1, 1031.4.2 and 1031.4.3.

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