

2009 IBC/IFC Requirements
for
Luminous Egress Path Markings
In
New and Existing High Rise Buildings

By

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IBC 403.5.5 Luminous egress path markings. Luminous egress path markings shall be provided in accordance with Section 1024.

IFC 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 (22 860 mm) above the lowest level of fire department vehicle access shall be provided with luminous *egress* path markings in accordance with Section 1024.

Exception: Open, unenclosed stairwells in historic buildings designated as historic under a state or local historic preservation program.

NOTE: Check to see how much time building owners will have to comply and how to submit plans for plan review and approval.

IBC/IFC 1024.1 General. *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 (22 860 mm) above the lowest level of fire department vehicle access in accordance with Sections 1024.1 through 1024.5.

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 1027.1, Exception 1.
2. Luminous egress path markings shall not be required in areas of *open parking garages* that serve as part of the exit path in accordance with Section 1027.1, Exception 3.

Considerations:

[] *Is the building a high rise building with occupied floors located more than 75 feet (22 860 mm) above the lowest level of fire department vehicle access and does the building contain a Group A, B, E, I, M, or R-1 Occupancy. If yes, Section 1024 applies since the exit enclosure will serve a Group A, B, E, I, M, and R-1 Occupancy.*

NOTE: "Approved" means "Acceptable to the code official or authority having jurisdiction."

IBC/IFC 1024.2 Markings within exit enclosures. Egress path markings shall be provided in *exit enclosures*, including vertical *exit enclosures* and *exit passageways*, in accordance with Sections 1024.2.1 through 1024.2.6.

IBC/IFC 1024.2.1 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 at a maximum of 1/2 inch (13 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 (13 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.

Considerations: *Plans & specifications should include sufficient information to determine:*

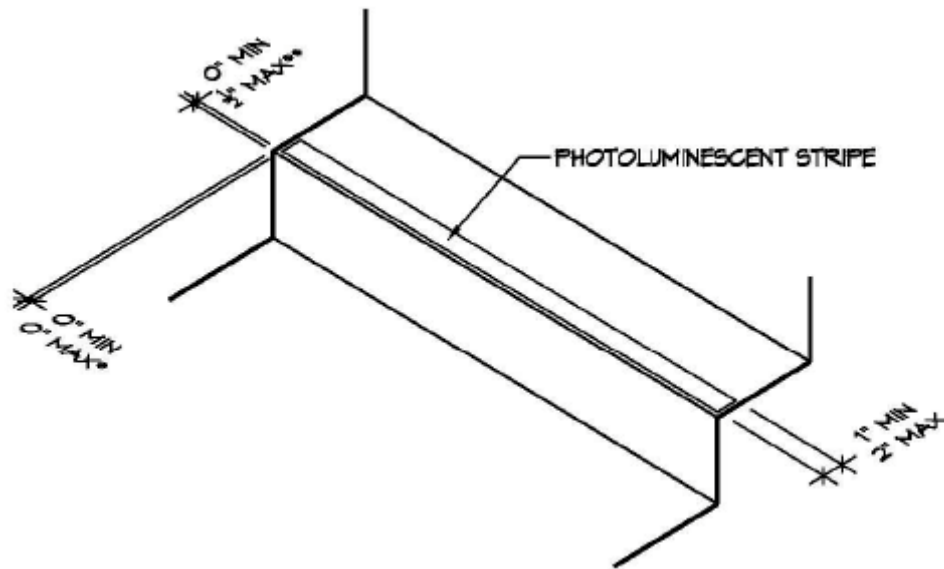
[] *The width specification for the step outlining stripes that comply with ASTM E2072 shall not be less than 1 inch nor more than 2 inches. Step outlining stripes that comply with UL 1994 may be of any minimum width in accordance with its' listing.*

[] *Step outlining stripes shall be solid and continuous. No zebra stripes or dots.*

[] *Step outlining stripes shall be applied to the horizontal leading edge of each step and extend for the full length of the step.*

[] *Step outlining stripes shall be placed at a maximum of 1/2 inch (13 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 (13 mm) down the vertical face of the step."*

NOTE: Editorial change in last sentence approved by ICC



IBC/IFC 1024.2.2 Landings. The leading edge of landings shall be marked with a stripe consistent with the dimensional requirements for steps.

Considerations: Plans and specifications should include sufficient information to determine:

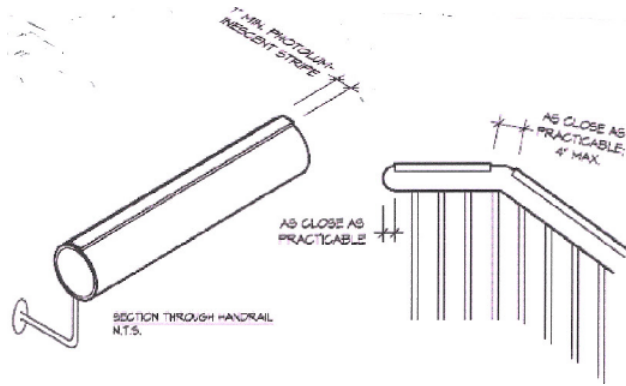
- [] The width specification for the leading edge of a landing stripe that complies with ASTM E2072 shall not be less than 1 inch nor more than 2 inches. Leading edge of a landing stripes that comply with UL 1994 may be of any minimum width in accordance with its' listing but should be consistent throughout the exit enclosure.
- [] Leading edge of a landing stripes shall be solid and continuous. No zebra stripes or dots.
- [] Leading edge of a landing stripes shall be applied to the horizontal leading edge of each landing and extend for the full length of the landing.
- [] Leading edge of a landing stripes shall be placed at a maximum of 1/2 inch (13 mm) from the leading edge of the landing and the stripe shall not overlap the leading edge of the landing by more than 1/2 inch (13 mm) down the vertical face of the landing step."

IBC/IFC 1024.2.3 Handrails. All *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.

Considerations:

- [] The width specifications for handrail markings that comply with ASTM E2072 shall not be less than 1 inch and the stripe is solid and continuous on the top surface of the handrail for the entire length of the handrail, including extensions and newel post caps. handrail markings that comply with UL 1994 may be of any minimum width in accordance with its' listing but should be consistent throughout the exit enclosure.
- [] Where handrails or handrail extensions bend or turn corners, the stripe shall not have a gap of more than 4 inches (102 mm)

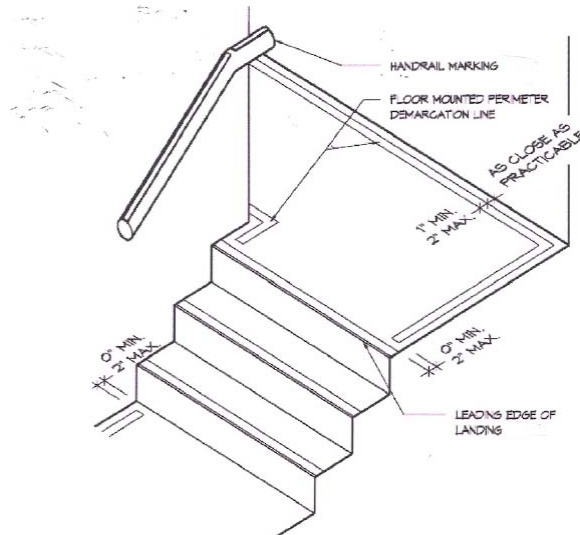


IBC/IFC 1024.2.4 Perimeter demarcation lines. *Stair* landings and other floor areas within *exit enclosures*, with the exception of the sides of steps, shall be provided with solid and continuous demarcation lines on the floor or on the walls or a combination of both. The stripes shall be 1 to 2 inches (25mm to 51 mm) wide with interruptions not exceeding 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.

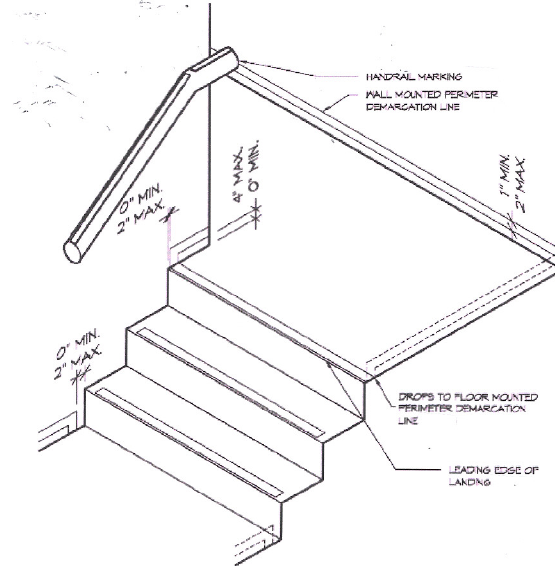
IBC/IFC 1024.2.4.1 Floor-mounted demarcation lines. Perimeter demarcation lines shall be placed within 4 inches (102 mm) of the wall and shall extend to within 2 inches (51 mm) of the markings on the leading edge of landings. The demarcation lines shall continue across the floor in front of all doors.

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



IBC/IFC 1024.2.4.2 Wall-mounted demarcation lines. Perimeter demarcation lines shall be placed on the wall with the bottom edge of the stripe no 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* doors that lead out of an *exit enclosure* and through which occupants must travel to complete the exit path.



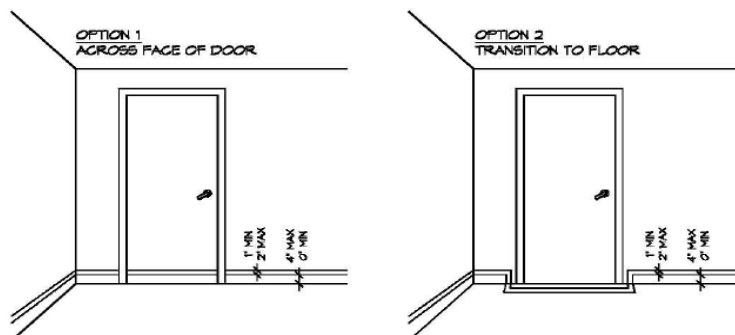
IBC/IFC 1024.2.4.3 Transition. Where a wall-mounted demarcation line transitions to a floor-mounted demarcation line, or vice versa, the wall-mounted demarcation line shall drop vertically to the floor to meet a complementary extension of the floor-mounted demarcation line, thus forming a continuous marking.

Considerations:

[] The width specifications for perimeter demarcation lines that comply with ASTM E2072 shall not be less than 1 inch nor more than 2 inches. Perimeter demarcation lines that comply with UL 1994 may be of any minimum width in accordance with its' listing but should be consistent throughout the exit enclosure.

[] Perimeter demarcation lines are solid and continuous.

[] Interruptions in perimeter demarcation lines shall not exceed 4 inches (102 mm).



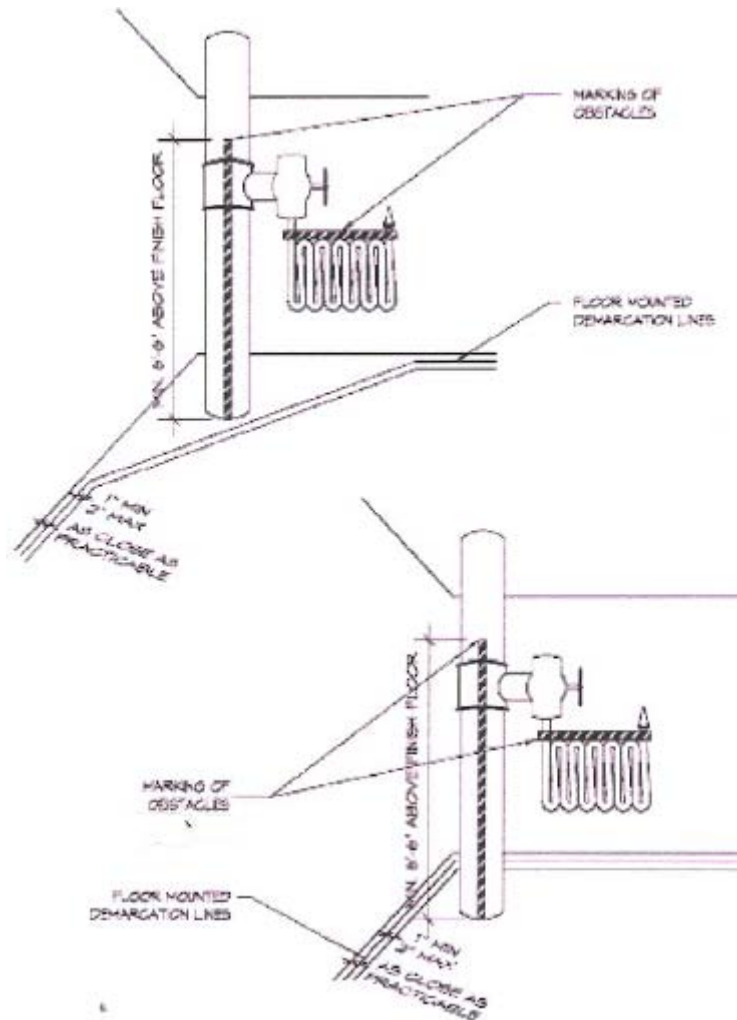
IBC/IFC 1024.2.5 Obstacles. Obstacles at or below 6 feet 6 inches (1981 mm) in height and projecting more than 4 inches (102 mm) into the egress path shall be outlined with markings no less than 1 inch (25 mm) in width comprised of a pattern of alternating equal bands, of luminescent luminous material and black, with the alternating bands no more than 2 inches (51 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.

Considerations:

[] Show obstacles at or below 6 feet 6 inches (1981 mm) in height and projecting more than 4 inches (102 mm) into the egress path on plans and that they will be marked with markings no less than 1 inch (25 mm) in width comprised of a pattern of alternating equal bands, of luminescent luminous material and black, with the alternating bands no more than 2 inches (51 mm) thick and angled at 45 degrees (0.79 rad).

[] The obstacle markings shall comply with ASTM 2072 or be listed in accordance with UL 1994.



IBC/IFC 1024.2.6 Doors from exit enclosures. Doors through which occupants within an *exit enclosure* must pass in order to complete the exit path shall be provided with markings complying with Sections 1024.2.6.1 through 1024.2.6.3.

IBC/IFC 1024.2.6.1 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 a minimum of 4 inches (102 mm) in height and shall be mounted on the door, centered horizontally, with the top of the symbol no higher than 18 inches (457 mm) above the finished floor.

Considerations:

[] *The emergency exit symbol shall have a square field with the background and the running man in green and the door opening in white.*

[] *The luminous emergency exit symbol shall comply with ASTM 2072 or be listed in accordance with UL 1994.*



IBC/IFC 1024.2.6.2 Door hardware markings. Door hardware shall be marked with no less than 16 square inches (406 mm²) of luminous material. This marking shall be located behind, immediately adjacent to or on the door handle and/or escutcheon. Where a panic bar is installed, such material shall be no less than 1 inch (25 mm) wide for the entire length of the actuating bar or touchpad.

Considerations:

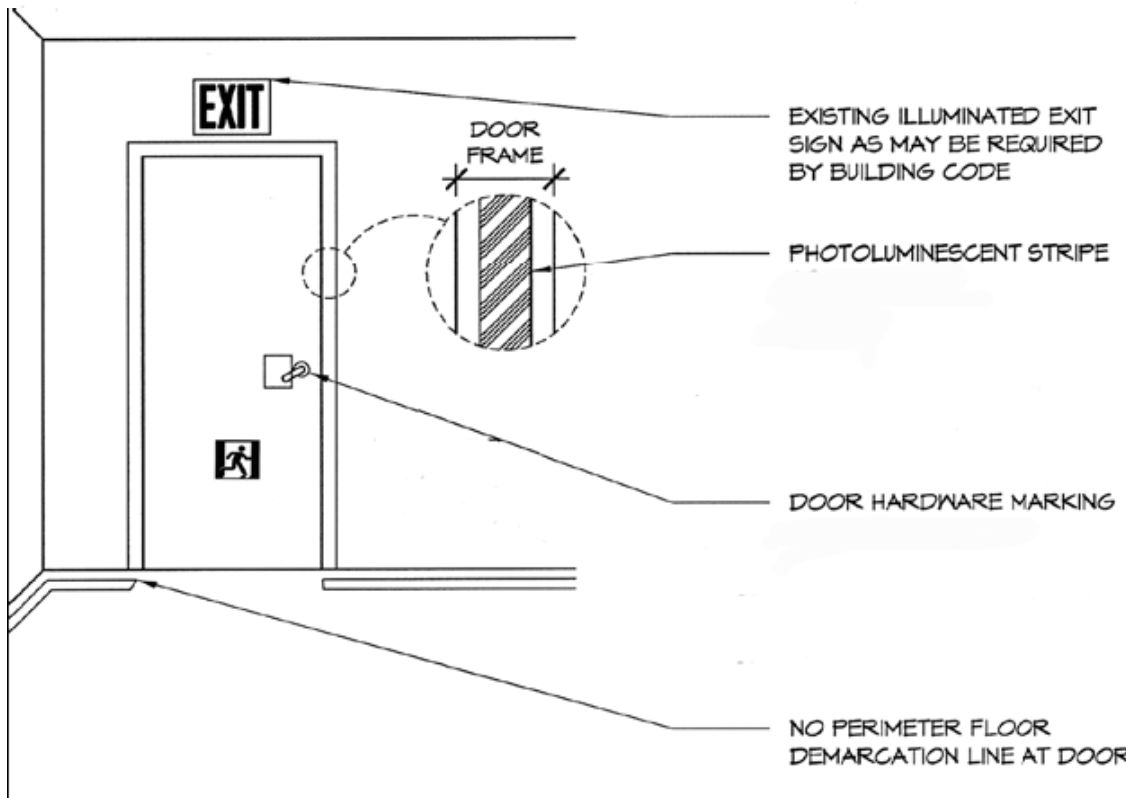
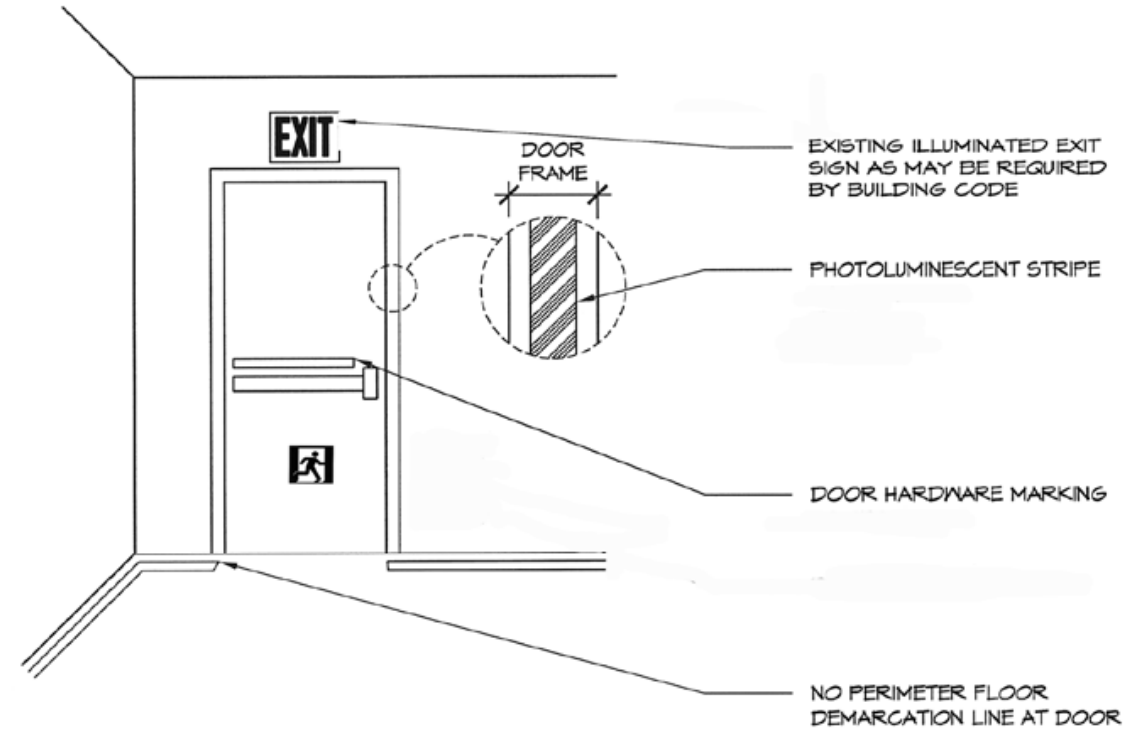
[] *The door hardware markings shall comply with ASTM 2072 or be listed in accordance with UL 1994.*

IBC/IFC 1024.2.6.3 Door frame markings. The top and sides of the door frame shall be marked with a solid and continuous 1 inch to 2 inch (25 mm to 51 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.

Considerations:

[] *The width specifications for door frame markings shall not be less than 1 inch nor more than 2 inches.*

[] *The door frame markings shall comply with ASTM 2072 or be listed in accordance with UL 1994.*



IBC/IFC 1024.3 Uniformity. Placement and dimensions of markings shall be consistent and uniform throughout the same *exit enclosure*.

IBC/IFC 1024.4 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 are not limited to, *self-luminous* materials and *photoluminescent* materials. Materials shall comply with either:

1. UL 1994; or
2. ASTM E 2072, except that the charging source shall be 1 foot-candle (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.

Considerations:

- [] Only non-electrical luminous egress path markings are permitted.
- [] Verify that materials comply with either UL 1994 or ASTM E 2072, except that the charging source shall be 1 foot candle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 5 millicandelas per square meter after 90 minutes.

IBC/IFC 1024.5 Illumination. *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.

Considerations:

- [] Insure that building managers understand this requirement.

IBC/IFC 1022.8.1 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 stair enclosure shall be a minimum of 1 1/2 inches (38 mm) in height.
3. The number designating the floor level shall be a minimum of 5 inches (127 mm) in height and located in the center of the sign.
4. All other lettering and numbers shall be a minimum of 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. When signs required by Section 1022.8 are installed in interior *exit enclosures* of buildings subject to Section 1024, the signs shall be made of the same materials as required by Section 1024.4.

Considerations:

- [] Paint, self-luminous and photoluminescent materials are OK.
 - [] Verify that the luminous materials comply with either UL 1994 or ASTM E 2072, except that the charging source shall be 1 foot candle (11 lux) of fluorescent illumination for 60 minutes, and the minimum luminance shall be 5 millicandelas per square meter after 90 minutes.
- NOTE:** All products listed in accordance with UL 1994 are required to have periodic factory follow-up inspections to insure that what is being manufactured and sold is the same product that was originally tested and listed. ASTM E 2072 does not have such a requirement. You may want to consider this fact when deciding which products to specify.



