

Exit and Related Signs: Proper Placement and Visibility Are Essential for Emergency Evacuation

Why Are Exit Signs So Important?

The answer may seem obvious, but people often do not appreciate the importance of exit signs. When there is an emergency in a building, all occupants and visitors must be informed of the most efficient way to exit the building. Not every person is familiar with a building's layout. Visitors to the Capitol or employees who are in a different part of the complex other than their normal work area will rely on exit signs to assist in locating the closest, safest way out of the building in the event of an emergency evacuation. If smoke affects visibility, exit signs may be critical in finding the way to safety. To enable the evacuation of occupants and visitors in the most efficient manner, certain rules must be followed when designing and installing exit signs.

What is a Compliant Exit Sign?

Visibility

The Life Safety Code, NFPA 101, requires a minimum level of visibility for exit signs. The letters require a minimum height not less than six inches (150 mm), the width

of the strokes of the letters not less than three-fourth of an inch (19 mm), the width of the letters not less than two inches (51 mm) except the letter I, and the spacing between the letters to be not less than three-eighth of an inch. Therefore, the exit sign shown in Figure 1, a temporary exit sign, is not compliant.

Occupants and visitors exiting the building may not be able to see this exit sign during an emergency because of decreased visibility due to smoke or loss of illumination.

Illumination

All exit signs must be suitably illuminated by a reliable light source as required by NFPA 101. Shown in Figure 2 is an externally illuminated exit sign. When the power to the building fails, the Exit sign may not be able to provide the required 5 ft-candle illumination.

To address this problem, exit signs are often internally illuminated by wiring them into emergency stand-by power. Other exit signs, such as tritium and photoluminescent, are energy efficient and do not require hard wiring. But both still require a constant external light source of 5 ft-candle in order to charge.



Figure 1: Improper paper Exit sign



Figure 2: An externally illuminated Exit sign

Exit Sign Placement

NFPA 101 requires that exit signs be installed not less than 80 inches above the finished floor to the bottom of the sign. There should be

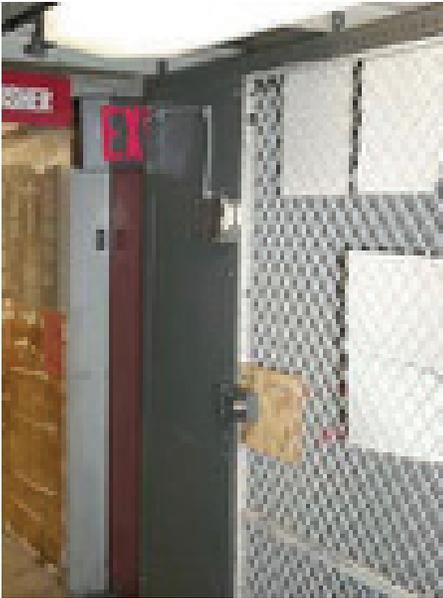


Figure 3: Blocked Exit sign



Figure 4: Not an Exit

absolutely no obstructions placed near the exit sign that would block its visibility such as the one shown in Figure 3.

For ADA compliance, additional exit signs must be installed on the wall adjacent to the latch side of the door as required by 2010 ADA Standards section 216.4 The mounting height must be 60 inches above the finished floor to the center line of the sign. Braille

should also be printed on the exit signs for vision-impaired persons.

Maintenance

Exit signs must not only be easily visible, but the proper type and in good working condition. For example, exit signs must point in the correct direction and if damaged, should be replaced immediately. NFPA 101 requires exit signs that are connected to a battery-operated emergency illumination source to be tested and maintained. Exit signs must also be visually inspected on a monthly basis.

“Not an Exit” Signs

Doors that may be mistaken for an exit need to have a “Not an Exit” sign to avoid and prevent any confusion. Signs indicating “Not an Exit” play a similar role as exit signs. Just as exit signs direct occupants to correct exit passageways, “Not an Exit” signs, such as the one shown in Figure 4, lead people away from incorrect passage-ways.

Staging Areas and Refuge Areas

For people with disabilities who cannot use the stairwells to exit the building, there may be a need to provide protected refuge areas and staging areas where they can wait for evacuation assistance in the event of an emergency. A staging area is an unprotected space located by elevator lobbies for disabled individuals where they can wait for firefighters or police officers to safely escort them out of the building. Shown in Figure 5 is a picture of an emergency staging area.

When conditions become extreme and it is safer to stay inside the building, occupants and visitors should gather at the “Area of Refuge,” an enclosed space protected from heat and smoke, and wait to be rescued. Each area of refuge should be identified by a clear sign with Braille pointing in the direction to the nearest area of refuge. Each area of refuge must be equipped with a two-way communication system to call for assistance as shown in Figure 6. These devices should be labeled properly and used for emergencies only.



Figure 5: Emergency staging area



Figure 6: Push-to-talk two-way communication box with temporary “Area of Refuge” sign

Life Safety Code Requirements

- Exits—other than main exterior exit doors that obviously and clearly are identifiable as exits—be marked by an approved sign that is readily visible from any direction of exit access. [NFPA 101, Section 7.10.1.2]
- Every sign required for exit or exit access—other than those where operations or processes require low lighting levels must be suitably illuminated by a reliable light source. Externally and internally illuminated signs must be legible in both normal and emergency lighting mode. [NFPA 101, Section 7.10.5.1]
- A minimum level of visibility is mandatory for exit signs. Specifically, signs must be located in such a location and be of such a size, distinctive color, and design that they are readily visible. All signs must also provide contrast with decorations, interior finish, or other signs, and may not be blocked by decorations, furnishings, or equipment that impairs visibility of a sign. Further, no brightly illuminated sign, display, or object that could detract from an exit sign are permitted in or near the line of vision of an exit sign. [NFPA 101, Section 7.10.1.8]
- All doors, passages or stairways that are neither an exit nor a way of exit access—yet are likely to be mistaken for an exit—must be identified with a “No Exit” sign. [NFPA 101, Section 7.10.8.3.1]
- All exit signs with a directional indicator must be placed in every location where the direction of travel to reach the nearest exit is not apparent. [NFPA 101, Section 7.10.2]
- Externally illuminated signs shall be illuminated by not less than 5 foot-candles (54 lux) at the illuminated surface and shall have a contrast ratio of not less than 0.5. [NFPA 101, Section 7.10.6.2.2]
- Every exit sign must be continuously illuminated. [NFPA 101, Section 7.10.5.2.1]
- Each area of refuge must be identified by a sign that reads as follows: AREA OF REFUGE [NFPA 101, Section 7.2.12.3.5]
- The international symbol of accessibility must be displayed. Signs shall be located as follows:
 - (1) At each door providing access to the area of refuge.
 - (2) At all exits providing an accessible mean of egress.
 - (3) Where necessary to indicate clearly the direction to an area of refuge. [NFPA 101, Section 7.2.12.3.5.1.]
- Area of refuge signs must be illuminated as required for exit signs where exit sign illumination is required. [NFPA 101, Section 7.2.12.3.5.2]



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