

## Visibility & illumination of Exit Signs

### ONTARIO BUILDING CODE

#### 3.4.5.1. Exit Signage

- (2) Except as provided by sentence (7), every exit shall,
- (a) be visible on approach to the exit,
  - (b) consist of a green pictogram and white graphic symbol meeting the visibility specification referred to in ISO 3864-1, "Graphical Symbols-Safety Colours and Safety Signs-Part 1: Design Principles for Safety Signs and Safety Markings", and
  - (c) conform to the dimensions indicated in ISO 7010, "Graphical Symbols-Safety Colours and Safety Signs- Safety Signs Used in Workplaces and Public Areas" for the following symbols:
    - I. E001 emergency exit left
    - II. E002 emergency exit right
    - III. E005 90-degree directional arrow, and
    - IV. E006 45-degree directional arrow.
- (3) Internally illuminated exit signs shall,
- (a) be continuously illuminated, and
  - (b) where illumination of the sign is powered by an electrical circuit, be constructed in conformance with CSA 22.2 NO. 141, "Emergency Lighting Equipment.
- (4) Externally illuminated exit signs shall be continuously illuminated by a light fixture supplied by an electrical circuit.
- (5) Photoluminescent and self luminous exit sign shall,
- (a) conform to CAN/ULC-S572, "Photoluminescent and Self Luminous Signs and Path Marking Systems",
  - (b) be labeled in accordance with the time duration for which they have been tested and listed,
  - (c) be so installed that upon failure of the regular power that will continue to be illuminated for the applicable time duration specified in Clause 3.2.7.4. (1)(b), and
- (d) be continuously illuminated if reliant on an external energy source to energize the reflective coating of the sign.
  - (6) If illumination of an exit sign is provided from an electrical circuit, that circuit shall,
    - (a) serve no equipment other than emergency lighting in the area where exit signs are installed, and
    - (b) be connected to an emergency power supply as described in Sentence 3.2.7.4.(1)

#### OBJECTIVE

Every exit sign must be visible on approach to the exit and shall consist of a green pictogram and white graphic symbol meeting the visibility specifications referred to in ISO 3864-1, "Graphical Symbols-Safety Colours and Safety Signs, as shown in this Builder Tip.

Internally illuminated exit signs shall comply with the requirements of CSA C22.2 No.141 and cannot exceed a maximum viewing distance of 30.5 m.

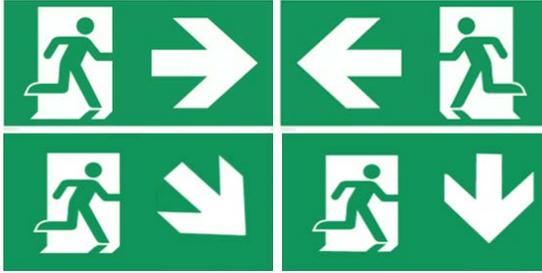
Photoluminescent exit signs require an external source of lighting for 'charging'.

Self Luminous signs are illuminated with a light source that consists of glass tubes internally coated with phosphor and filled with tritium gas, a natural isotope of hydrogen. They require no electricity or external light source.

Photoluminescent and Self-Luminous Exit signs evaluated at a viewing distance of less than the maximum 30.5 m in accordance with CAN/ULC-S572 shall be marked with the following statement: "Rated Viewing Distance \_\_\_\_". The blank shall contain "15.25 m" or "22.86 m" in accordance with the standard, be a minimum of 3.2 mm height and permanent.

The height of a sign is dictated by the legibility of the sign, which for the most part, is related to the distance of the observer to the sign. This means that a typical internally illuminated running man exit sign 305mm W x 178mm H that conforms to ISO 7010 can be read at a maximum distance of  $(152\text{mm} \times 100) = 15.25$  meters. A larger sign height would allow for a greater viewing distance, not to exceed 30.5m. Additional exit signs may be introduced at intervals that will maintain the maximum exit sign dimensional height at 305mm.

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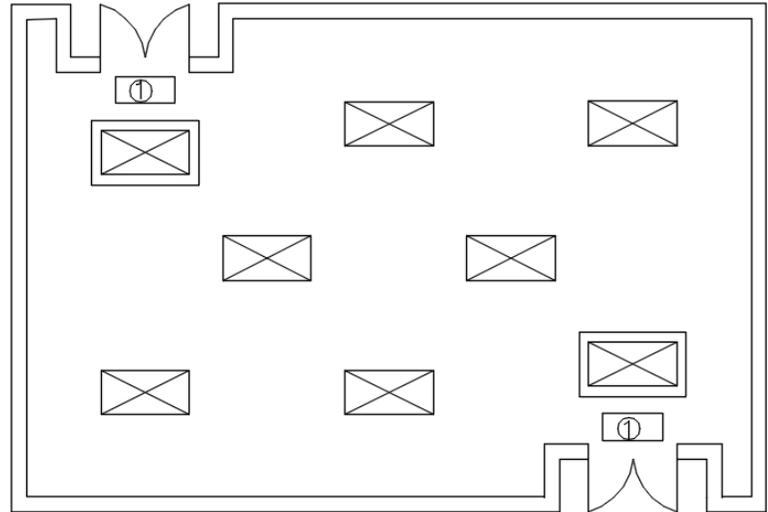
As per ISO 7010

LEGEND



 LIGHT FIXTURE MAY BE CONTROLLED BY ROOM WALL SWITCH

 LIGHT FIXTURE TO REMAIN ON CONTINUOUSLY TO ILLUMINATE THE REFLECTIVE COATING ON A PHOTOLUMINESCENT EXIT SIGN (CANNOT BE CONTROLLED BY ROOM WALL SWITCH)



REFLECTIVE CEILING  
 PLAN—Photoluminescent Exit Signs

Based on CSA C22.2 No.141, ISO 3864-1, ISO 7010 and CAN/ULC-S572 standard. Also, refer to manufactures specifications.

**Maximum Viewing distance:**<sup>(1)</sup>

- 15.25m—a sign height of 152mm
- 22.86m—a sign height of 229mm
- 30.5m —a sign height of 305mm
- 30.5m —a sign height of 330mm<sup>(3)</sup>

Note: Pictogram of running man and arrow shall each be a min. of 150mm x 150mm

**Recommended installation heights:**<sup>(2)</sup>

Above door: 2m–2.5m from floor level to base of sign

Directional wall fixed signs: 1.7m–2m from floor level to base of sign

When the maximum viewing distance is exceeded, an additional sign is required until the viewing distance has reached the exit door or facility. Note: 30.5m is the maximum

(1) Factor of distance uncorrected at 100

(2) If sign is installed higher than the recommended heights, the factor of distance must be corrected, and therefore the size of sign must be increased accordingly.

(3) If the factor of distance is corrected, and the installation height of the sign is greater than 2.5m up to 10m above the floor level the sign height dimension of 330mm is recommended. Corrected factors of distance should be designed by a qualified designer.