INTERPRETATIONS & PROCEDURES

DEVELOPMENT SERVICES and FIRE DEPARTMENTS

BUILDING DIVISION & FIRE PREVENTION

CODE: 2009 International Building & Fire Code **INDEX NUMBER:** IBC-11-003

SECTION: IBC 1024, 2604 & 3404.1 Ex. #1, IFC 1024 & 4604.23 **ISSUE DATE:** May 9, 2011

SUBJECT: Luminous Egress Path Markings Retrofit & New Installations

The 2009 International Building and Fire Codes (IBC & IFC) adopted by the State of Washington effective July 1, 2010, require photo luminescent or self-luminous exit path markings in exit enclosures of new and existing (permitted prior to this code adoption) buildings of Type A, B, E, I, M or R-1 occupancies, which have occupied floors located more than 75 feet above the lowest level of fire department vehicle access (high-rise buildings). The intent of this requirement is to provide improved safety for individuals negotiating stairs inside a high-rise building by improving the visibility of stair treads, handrails, and obstacles, under normal and emergency conditions, or in the event the emergency power supply fails to operate.

For new buildings the requirements for installation are set forth in Section 1024 of the 2009 IBC & IFC. These inspections will be performed by the Building Department inspector. For existing buildings, a retroactive requirement is set forth in Section 4604.23 of the 2009 IFC. These inspections will be performed by the Fire Department inspector.

Luminous markings are now required for all doors, steps, landings, handrails, perimeters, and obstacles along the path of egress. IFC Section 4604.23 sets forth the requirements for existing buildings as being in accordance with Section 1024. The City of Bellevue recognizes that neither of these sections addresses how the installation of these markings in existing buildings may lead to noncompliance specific to the handrails, steps and landings. If improperly marked, the luminous path markings may unintentionally make the path of egress more confusing. In an attempt to address these installations, the following clarifications are provided (If additional requests for clarification are submitted, we will amend and republish this document).

Question (Q) / Answer (A):

Q1. Are luminous Egress Path Markings required in the portion of a stair enclosure that extends below the level of exit discharge? For example, are luminous Egress Path Markings required in the portion of a stair enclosure that extends below the level of exit discharge from a Group A, B, E, I, M or R-1 occupancy into another occupancy group not in the referenced group, such as where a stair enclosure from a office building (Group B occupancy) extends into a parking garage (Group S occupancy)?

A1. Luminous egress path markings should never extend below the level of egress. Doing so could cause occupants to continue past the level of exit discharge in an attempt to egress the building.

Q2. Are luminous Egress Path Markings required in the portion of a stair enclosure that extends from the highest occupied floor level up to a roof access?

A2. Luminous egress path markings would only be required from a roof access when the roof top is considered an occupied space. Use of the roof top only for mechanical equipment would not be considered occupied space, but a roof top patio, court, seating area, or similar uses would constitute occupied space.

Q3. Are luminous egress path markings required in a stair enclosure that originates in an occupancy group not referenced in the IBC, but extends through one of the referenced occupancy groups? For example, the top 4 floors in a high rise building is a Group R-2, but the lower 8 floors are Group R-1.

A3. Once luminous egress path markings are required, the markings must continue until the point of exit discharge unless the code specifically provides an exception for such markings (see 1024.1 exceptions 1 & 2). For example, given a high rise building with hotel floors (Group R, Division 1) occupying the top half and condominium floors (Group R, Division 2) occupying the lower half, luminous markings would be required throughout the full height of the enclosure. If the reverse condition exists, such as for a condominium on the top

with a hotel on the bottom, then luminous markings would only be required on the lower half.

Q4. Are luminous egress path markings required in a stair enclosure that is less than 75' in height?
A4. For the same reason that luminous egress path markings are not required in non-high rise buildings, luminous egress path markings are not required in stair enclosures that do not extend in a high rise building more than 75' in height.

Q5. What are the requirements for installation of luminous egress path markings in new buildings?
A5. Buildings permitted for construction under the 2009 IBC and IFC are expected to comply with the all of the requirements set forth in the applicable sections and as such the tolerances provided for existing construction will not applicable.

Q6. What are the requirements for installation of luminous egress path markings in existing buildings, which are defined as buildings for which the building permit application was submitted prior to the July 1, 2010 code adoption?
A6. Handrails: IBC Section 1012 specifies maximum and minimum dimensions for Type I and Type II handrails. A maximum tolerance of + 1/8 inch will be accepted when installing markings on or around existing handrails. As such, existing Type I handrail dimensions will now be allowed a maximum diameter of 2 1/8 inch for circular handrails and a maximum cross-section dimension of 2 3/8 inch for non-circular handrails. Type II handrails will be allowed the same maximum tolerance of + 1/8 inch in terms of grip dimensions. In both cases the specified edge minimum radius dimension of 0.01 inch will be required. The 1 1/2 inch clear space between the handrail and a wall or other surface shall be maintained as required in IBC section 1012.7.
A6. Steps, Landings & Ramps: IBC Sections 1009, 1010 specifies dimensions for heights, surfaces, dimensional tolerances, profiles, etc. and provides for certain allowances for minor variations that should address most retrofit installations. Prior to selecting the marking device or system, special attention should be given to these tolerances and the existing conditions. The architect/design professional must perform a thorough evaluation of those portions of the existing stair system required to receive the luminous egress marking devices. Existing stair conditions may significantly affect the final installation. For example the maximum riser height in buildings constructed under the IBC is 7 inches. A dimensional tolerance of 3/8 inch is allowed between the largest and smallest riser height within the run. Adding devices may or may not affect this tolerance depending on the type of device used.
A6. Graphical Portrayal or Onsite Mockup Required: If the prescribed dimensional tolerances are proposed to be exceeded, accurate worst case conditions, and typical conditions, must be graphically portrayed in a proposal and/or via an on-site mockup prior to approval of the system. An on-site mockup is recommended since it is the best way to reach agreement on the installation. The proposal is to be submitted to the Fire Department for review and approval.

Please see also Public Information Handout (F-47) *Luminous Egress Path Markings,* for further information on the Fire Department inspection requirements for existing buildings at:

http://www.cityofbellevue.org/pdf/Fire/F-47_LuminousEgress06.pdf

SIGNATURE: _____ **DATE:** 5/11/11
Gregory H. Schrader, P.E. Building Official

SIGNATURE: _____ **DATE:** 5/11/11
Ken Carlson, Fire Marshal

ATTACHMENTS N.A.

SUPERSEDES: N/A