



Exit and Egress Facilities in Multi-Unit Residential, Office, Mercantile & Industrial Buildings

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Purpose:

- To inform owners, strata councils, and management companies that any changes or alterations to exit and egress facilities in buildings must comply with the City's requirements including the BC Building Code and the BC Fire Code.

Background:

- The Building Approvals Department, the RCMP, and the Richmond Fire Rescue Division have noticed an ever-increasing number of changes for exit/egress facilities and door hardware to provide a higher level of security.
- To ensure fire and life safety issues are not jeopardized, a guide has been developed to assist owners, strata councils and management companies of multi-unit residential, office, mercantile, and industrial buildings.

Implementation:

Requirements for All Multi-Unit Residential, Office, Mercantile & Industrial Buildings

- Doors which are required exits or located in an access to an exit, must allow unrestricted egress and exiting from the building. These doors may be locked to exclude entry but must allow egress for exiting. The latching, locking and other fastening devices must be readily openable from the inside (direction of exit travel) without requiring keys, special devices or specialized knowledge of the door's opening mechanism.
- Magnetic locking devices are permitted if installed in conformance with Article 3.4.6.15. of the BC Building Code 1998 "Door Releasing Hardware" (attached).
- Doors in fire separations must have a self-closing device and a positive latching system to hold the door in a closed position after each use. These fire-rated doors and assemblies must not be altered or cut as the original factory certification may be voided.
- Plans, building permits, and possibly electrical permits, may be required if changes to exit/egress door assemblies and locking hardware are undertaken.

Additional Requirements for High Buildings (Over 6 Storeys in Height)

- The exit stair shaft must allow an occupant to travel not more than 2 storeys up or down to reach an unlocked door for crossover access to a floor area as per Article 3.4.6.17. "Emergency Access to Floor Areas" of the BC Building Code 1998 (attached).
- Should you have any questions, comments or suggestions concerning this bulletin, please contact Mr. L. Johnson, Supervisor, Building Inspections at (604) 276-4315.

See attached →

- b) the door leaves are capable of being opened from inside the *building* without requiring keys, special devices, or specialized knowledge of the door opening mechanism,
- c) the allowable exiting capacity is based on the clear width of passage through the door enclosure when the doors are fully collapsed,
- d) a permanent sign, whose centreline is between 1 000 mm and 1 500 mm above the floor, is placed on each face of each door leaf indicating the method for collapsing the door leaf in an emergency, and
- e) glass used for door leaves and enclosure panels is safety glass conforming to
 - i) CAN/CGSB-12.1-M, "Tempered or Laminated Safety Glass," or
 - ii) CAN/CGSB-12.11-M, "Wired Safety Glass."

3.4.6.15. Door Release Hardware

1) Except for devices on doors serving a *contained use area* or an *impeded egress zone* designed to be remotely released in conformance with Article 3.3.1.12., and except as permitted by Sentence (4) and Article 3.4.6.16., locking, latching and other fastening devices on a principal entrance door to a *building* as well as on every *exit* door shall permit the door to be readily opened from the inside with not more than one releasing operation and without requiring keys, special devices or specialized knowledge of the door opening mechanism. (See Appendix A.)

2) If a door is equipped with a latching mechanism, a device that will release the latch and allow the door to swing wide open when a force of not more than 90 N is applied to the device in the direction of travel to the *exit* shall be installed on

- a) every *exit* door from a *floor area* containing an *assembly occupancy* having an *occupant load* more than 100,
- b) every door leading to an *exit* lobby from an *exit* stair shaft, and every exterior door leading from an *exit* stair shaft in a *building* having an *occupant load* more than 100, and

- c) every *exit* door from a *floor area* containing a *high hazard industrial occupancy*.

3) Except as required by Sentence 3.8.3.3.(7), every *exit* door shall be designed and installed so that, when the latch is released, the door will open under a force of not more than 90 N, applied at the knob or other latch releasing device.

4) Electromagnetic locks that do not incorporate latches, pins or other similar devices to keep the door in the closed position are permitted to be installed on *exit* doors other than doors leading directly from a *high hazard industrial occupancy*, provided

- a) the *building* is equipped with a fire alarm system,
- b) the locking device, and all similar devices in the *access to exit* leading to the *exit* door, release upon actuation of the fire alarm signal,
- c) the locking device releases immediately upon loss of power controlling the electromagnetic locking mechanism and its associated auxiliary controls,
- d) the locking device releases immediately upon actuation of a manually operated switch readily accessible only to authorized personnel,
- e) a force of not more than 90 N applied to the door opening hardware initiates an irreversible process that will release the locking device within 15 s and not relock until the door has been opened,
- f) upon release, the locking device must be reset manually by the actuation of the switch referred to in Clause (d), and
- g) a legible sign is permanently mounted on the *exit* door to indicate that the locking device will release within 15 s of applying pressure to the door-opening hardware.

(See Appendix A.)

5) Door hardware for the operation of the doors referred to in this Section shall be installed at a height not more than 1 200 mm above the finished floor.

3.4.6.16. Security for Banks and Mercantile Floor Areas

1) If a *building* is *sprinklered* throughout, the requirements of Sentence 3.4.6.15.(1). are permitted to be waived for *exit* and egress doors complying with Sentences (2) to (9) that serve a *floor area* or part of a *floor area* used exclusively for

- a) a bank, or
- b) the sale of retail merchandise.
(See Appendix A.)

2) *Exit* and egress doors referred to in Sentence (1) shall be designed to prevent locking at any time that the part of the *floor area* that they serve is open to the public.

3) A sign with the words "This door shall not be locked at any time that the public is present" in letters not less than 50 mm high shall be permanently affixed to both sides of doors referred to in Sentence (1).

4) *Exit* and egress facilities complying with Sentences (5) to (9) shall be incorporated for egress by persons other than the public from a *floor area* or a part of a *floor area* referred to in Sentence (1) during times when the public is neither present nor being admitted to the area that they serve.

5) In *exit* and egress facilities referred to in Sentence (4), at least one door at each *exit* and egress location shall

- a) be operable in conformance with Sentence 3.4.6.15.(1)., or
- b) be equipped with locks conforming to Sentence 3.4.6.15.(4). that release immediately
 - i) if an *alert signal* or *alarm signal* is initiated in the fire alarm system, or
 - ii) the sprinkler system is actuated.

6) A door referred to in Sentence (5) shall be permanently and distinctly marked to indicate that it is an emergency *exit*.

7) *Exit* and egress facilities required for evacuation of persons other than the public from a *floor area* or a part of a *floor area* referred to in Sentence (1) shall have an aggregate width based on the maximum number of persons other than the public and determined in accordance with Articles 3.4.3.2. to 3.4.3.5.

8) Travel distance to an *exit* referred to in Sentence (7) shall not exceed the travel distance determined in accordance with Subsection 3.4.2.

9) *Exit* and egress doors serving a *floor area* or part of a *floor area* referred to in Sentence (1) are permitted to be equipped with locks that require keys, special devices or specialized knowledge of the door opening mechanism provided

- a) the doors do not lead into *exit* stairs,
- b) the doors do not lead from *exit* stairs to the exterior of the *building*,
- c) the doors do not serve any other *occupancy*,
- d) the area served contains at least one telephone
 - i) that is accessible and in operation at all times,
 - ii) that is not coin or card operated, and
 - iii) marked to indicate that it is for emergency use,
- e) the area served is illuminated by normal power or by emergency power when the doors are locked,
- f) there are provisions that enable an announcement to be made throughout the area served before the locks are fastened, and
- g) the locks are designed for use during times that the *building* is not occupied.

3.4.6.17. Emergency Access to Floor Areas

1) In a *building* more than 6 *storeys* in *building height*,

- a) doors providing access to *floor areas* from *exit* stairs shall not have locking devices to prevent entry into any *floor area* from which the travel distance up or down to an unlocked door is more than 2 *storeys*,
- b) doors referred to in Clause (a) that provide access into the *floor area* shall be identified by a sign on the stairway side to indicate that they are openable from that side, and

- c) a master key to fit all door locking devices that are intended to prevent entry into a *floor area* from an *exit* stair shall be provided in a designated location accessible to fire fighters, or the door shall be provided with a wired glass panel not less than 0.0645 m² in area and located not more than 300 mm from the door opening hardware.

2) If access to *floor areas* through unlocked doors is required by Clause (1)(a), it shall be possible for a person entering the *floor area* to have access through unlocked doors within the *floor area* to at least one other *exit*.

3.4.6.18. Floor Numbering

- 1) Arabic numerals indicating the assigned floor number shall
- be mounted permanently on the stair side of the wall at the latch side of doors to *exit* stair shafts,
 - be not less than 60 mm high, raised approximately 0.7 mm above the surface,
 - be located 1 500 mm from the finished floor and not more than 300 mm from the door, and
 - be contrasting in colour with the surface to which they are applied. (See Appendix A.)

3.4.7. Fire Escapes

3.4.7.1. Scope

1) Except as permitted by Sentence (2), fire escapes shall not be erected on a *building*.

2) If it is impracticable to provide one or more of the *exit* facilities listed in Article 3.4.1.4., fire escapes conforming to Articles 3.4.7.2. to 3.4.7.7. are permitted to serve *floor areas* in an existing *building* provided the *floor areas* served are not more than

- 2 *storeys* above ground level in *care or detention occupancies*, and
- 5 *storeys* above ground level in other *occupancies*.

3.4.7.2. Fire Escape Construction

1) Fire escapes shall be of metal or concrete, of the stair type extending to ground level, constructed throughout in a strong substantial

manner and securely fixed to the *building*, except that wooden fire escapes are permitted to be used on *buildings* of *combustible construction* if all posts and brackets are not less than 89 mm in their least dimension and all other woodwork is not less than 38 mm in its least dimension.

3.4.7.3. Access to Fire Escapes

1) Access to fire escapes shall be from corridors through doors at floor level, except that access from a *dwelling unit* is permitted to be through a casement window having an unobstructed opening not less than 1 100 mm high by 550 mm wide with a sill height of not more than 900 mm above the inside floor.

2) The clear area of a fire escape balcony onto which a door opens, shall be not less than 1 m².

3.4.7.4. Protection of Fire Escapes

1) If a fire escape serves any *storey* above the second, openings located in a zone described in Sentence (2), including access doorways in the exterior walls of the *building* to which the fire escape is attached, shall be protected by *closures* conforming to Subsection 3.1.8.

2) The zone referred to in Sentence (1) extends from any balcony, platform or stairway of a fire escape to a distance

- 3 m horizontally,
- 10 m below, or
- 1.8 m above.

3.4.7.5. Stairs

1) Stairs shall be inclined at an angle of not more than 45° with the horizontal, and their steps shall have risers not more than 210 mm high and treads not less than 220 mm wide exclusive of nosing.

2) Stairway headroom shall be not less than 1 950 mm plus the height of one riser measured vertically above the nosing of any tread or platform.

3) The width of a fire escape shall conform to Sentence 3.4.3.1.(1), except that the width is permitted to be reduced to 550 mm provided the fire escape serves

- not more than 3 *storeys*, and
- not more than 15 persons.