

CODE GUIDE

OFFICE OF PLANNING & DEVELOPMENT REVIEW

TOPIC: Exiting – Type of Lock or Latch - UBC/10/#8

CODE: Structural Specialty Code: 1998 Edition

APPROVED: August 1, 2001 *[Margaret M. Mahoney]*

REFERENCE: Section 1003.3.1.8 – Structural Specialty Code
NFPA 101B, Code for Means of Egress for Buildings
and Structures

SUBJECT: Access Control Systems Where Egress (Exiting) is
Restricted

QUESTION: 1. Security and monitoring for entrance and egress is becoming a popular building feature. Access control systems generally require a magnetic card or other device for authorized entry. Often, systems consist of a sensor on the egress side of the door arranged to detect individuals approaching. Then, the doors unlock upon the detection of the approaching individual. Some systems restrict only access and some restrict both access and egress. Not all systems provide latching. Are access control systems regulated by the Structural Specialty Code?

RESPONSE: 1. Access control systems restricting egress or those used on fire rated doors are regulated by the Structural Specialty Code (Code). Systems controlling entrance only that do not restrict egress are not regulated by the Code.

QUESTION: 2. Are access control systems allowed in the egress path?

RESPONSE: 2. Yes, access control systems are allowed in the egress path provided they are installed in accordance with this guide.

QUESTION: 3. What standards, definitions and restrictions apply to the design and installation of access control systems?

RESPONSE: 3. The following standards, definitions and restrictions apply to the design and installation of access control systems. Access control systems that are designed in accordance with this guide are not

required to be approved through the code alternate appeal process.

A. **General.** All access control systems shall:

1. Not require keys, tools or special knowledge to operate doors or locks when traveling in the direction of egress;
2. Allow normal and emergency egress through doors at all times; and
3. Allow doors required to have a fire rating to latch at all times.

B. **Definitions.** The following definitions are for use within this code guide.

1. **Magnetic Lock** – “deadbolt” type lock which is held in the locked position by an electro-magnet.
2. **Electric Strike** – latching door hardware where the strike swivels free upon an electrical signal allowing opening of the door. Control devices are mounted on access side only. Exiting is allowed with the turn of the latch knob, lever or panic bar.
3. **Electric Lockset** –latching door hardware with locks on the latching mechanism controlled by an electrical signal.
4. **Fail Safe** – no access control with the loss of power
5. **Request to Exit Devices (REX Device)**–include all of the following:
 - a. Motion Detectors;
 - b. Step Pads;
 - c. Manual Touch Bars; or
 - d. Panic or Crash Bar.

C. **Permits.** The following building, electrical and alarm permits are necessary for the installation of access control systems:

1. **Building Permits:**
 - a. Building permits are required for installation of new access control systems using REX devices, or other restrictions to egress, in new or existing buildings.
 - b. Building permit submittal information for access control systems shall include all of the following:
 - 1) Identification of REX device used to detect approaching occupant;
 - 2) Location of manual release device;
 - 3) Specifications for timer settings for automatic and manual release functions; and
 - 4) Documentation that use of locking mechanisms (hinges, bolts, latches etc.) is consistent with their listings.

2. **Electrical permits:**

- a. Electrical permits are required for all installations of electrically powered access control systems in new or existing buildings.
 - b. Electrical permits are required when additional doors are added to an existing access control system or a system is retrofitted. All system changes shall meet the provisions of this guide.
 - c. A listed power supply must be used for access control systems.
 - 1) Electrical devices connected to listed Class 2 power supplies are not required to be listed, but must be a recognized part of the access control system.
 - 2) Electrical devices connected to listed Class 1 power supplies must be listed or be an identified part of the listed access control system.
3. **Alarm Permits.** An alarm permit is required from the Fire Marshal's Office when the access control system is tied to the fire alarm system.
- D. **Occupancy Limitations.** The occupancy limitations listed below apply to each classification as specified.
1. **General.** In all occupancy classifications where access control systems are used, the following provisions shall be met:
 - a. Except as allowed for secure elevator lobbies in b. below, restricting egress into a stair enclosure is prohibited.
 - b. Secure Elevator Lobbies. Elevator lobbies above or below the main floor may be locked when all of the following conditions are met:
 - 1) Elevator call within locked elevator lobbies will always request an elevator except when elevator is recalled in fire alarm mode; and
 - 2) Elevator lobby doors that provide access to exit stairways will unlock upon elevator recall or any system alarm.
 - c. Access control hardware on fire rated doors must maintain the latching requirement in all circumstances.
 - d. Transit Street Main Entrances. Access control hardware used on transit street main entrances must allow unrestricted access during business hours. (See Zoning Code Section 33.130.242)
 2. **Types of Locking Devices Allowed.**
 - a. **Electric strikes and electric locksets** are allowed for all occupancies when:
 - 1) The strikes and locksets are installed to fail safe, and
 - 2) Egress only occurs in one direction.

- b. **Magnetic locks.** Magnetic locks require REX devices in the direction of egress travel and are limited to use as specified in the table below.

Occupancy Allowances and Limitations for Magnetic Locks	
Occupancy Classifications Allowing Use of Magnetic Locks	Specific Limitations
Educational, Day Care (E1, E2, E3)	None
Health Care (Ambulatory) (SR-1, I-1.2 or I-3)	Devices allowed on exterior doors only
Health Care (Secure-Alzheimer or new baby wards, emergency rooms) (I-1, I-3 (Health Care Only) or SR-1)	Devices allowed on exterior doors only unless specifically approved through code alternate appeal process
Residential including: hotels, dormitories, apartments, residential board and care (R-1, SR-2 or SR-3)	None
Mercantile (M)	Buildings shall be protected throughout by either: 1. An approved, supervised fire detection system; or 2. An approved, automatic sprinkler system
Business (B)	None
Industrial (F-1, F-2 or Any H)	None
Storage (Any S)	None

- E. **Installation Requirements.** Access control devices restricting egress shall meet all of the following installation requirements:

1. An automatic REX device shall be provided on the egress side of the doors as follows:
 - a. The device shall be located to detect individuals approaching the doors; and
 - b. The doors shall unlock upon detection of approaching individual.
2. Loss of both normal and emergency power to the door lock mechanism and to the REX device shall cause both to fail safe.
3. The doors shall unlock from a manual release device. The manual release device shall meet all of the following conditions:
 - a. The device shall be located 40 in. to 48 in. vertically above the floor and within 5 ft. of the secured doors;

- b. The device shall be readily accessible, located within the reach ranges described in Chapter 11 of the OSSC and clearly identified by a sign that reads, "PUSH (PULL) TO EXIT"; and
 - c. Upon device operation, the device shall cause direct interruption of power to the locking device and the locking device shall deactivate. In addition, the doors shall remain unlocked for a least 30 seconds.
- 4. Magnetic locks used in a fire door shall be equipped with a latching mechanism.
 - 5. Where provided, activation of the fire alarm system (manual or automatic) shall automatically unlock the doors. The doors shall remain unlocked until the fire protective signaling system has been manually reset.
 - 6. Where provided, activation of the building automatic sprinkler or fire detection system shall automatically unlock the doors. The doors shall remain unlocked until the alarm system has been manually reset.