

# Orange County Fire Authority

## Community Risk Reduction

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# Utilization of Special Egress-Control Devices



## Guideline E-01

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# Utilization of Special Egress-Control Devices

## PURPOSE

As a readily available egress system is critical to rapid evacuation of a building, door locks that may control, prevent, or delay travel to the building's exits are strictly controlled. The intent of this guideline is to provide information necessary to ensure that projects, where these special egress-control devices are proposed, will be provided with an acceptable means of egress system that is in accordance with applicable provisions of the 2016 California Building and Fire Codes (CBC, CFC).

## SCOPE

The CBC and CFC provide the authority to approve the installation of listed special egress-control devices to the Building Official and/or Fire Code Official. Installation is restricted to the occupancy groups listed below. Delayed egress devices shall only be installed when the building is protected **throughout** by an approved automatic fire sprinkler system and when an approved smoke detection system is provided on the story (or stories) served by egress-controlled doors.

Access-controlled egress doors (CBC 1010.1.9.7 and section 3A of this guideline)

- Buildings or tenant spaces containing the following occupancies: A, B, I-2, M, R-1, R-2

Delayed egress locks (CBC 1010.1.9.7 and section 3B of this guideline)

- Any occupancy except A, E, H and L

Elevator lobby egress locks (CBC 1010.1.9.12 and section 3C of this guideline)

- Generally B occupancy mid-rise and high-rise structures

Electromagnetically locked egress doors (CBC 1010.1.9.9 and section 3D of this guideline)

- Buildings or tenant spaces containing the following occupancies: A, B, E, M, R,-1, R-2

## SUBMITTAL REQUIREMENTS

1. Plans: Legible, scaled floor plans and details showing the location and operation of proposed special egress-control system installations shall be submitted for approval to the building department and the Orange County Fire Authority (OCFA) prior to installation. Plans shall demonstrate compliance with the applicable sections of this guideline and all requirements in the CBC and CFC, including listing sheets where necessary. Plans shall include the relevant section of the OCFA notes that are included at the end of this guideline. Plans not conforming to these minimum requirements will be returned as incomplete and may be subject to resubmittal fees. When use of the special egress-control device requires a smoke detection system or when the special egress-control device is otherwise tied into an alarm or smoke detection system, the presence and operation of special egress control devices shall also be clearly noted on the alarm plans that are submitted for the project.

2. Acceptance and Annual Certification: An OCFA inspector shall witness inspections of all new installations. A copy of the fire alarm certification test and the annual tests conducted by a state licensed fire alarm system contractor shall be provided to the OCFA upon request.
3. CBC/CFC Requirements:
  - A. Access-controlled egress door installations shall conform to all of the following (CBC 1010.1.9.8):
    - 1) The doors shall be arranged to unlock by a signal form or loss of power to the sensor provided on the egress side of the door.
    - 2) Loss of power to that part of the access control system which locks the doors shall automatically unlock the doors.
    - 3) The doors shall unlock via a manual unlocking device located 40-48 inches above the floor and within 5 feet of the doors. Operation of the manual unlocking device shall result in direct interruption of the power to the lock. The power interruption shall be independent of the access control system electronics. The door shall remain unlocked for at least thirty seconds. The unlocking device shall be push-operated as pull-type devices are not allowed.
    - 4) The manual unlocking device shall be readily accessible and provided with a sign that reads, "PUSH TO EXIT." A tactile sign shall also be provided that complies with CBC 11.
    - 5) Activation of the fire sprinkler or alarm system, if provided, shall automatically unlock the doors. They shall remain unlocked until the alarm system has been reset.
    - 6) The door locking system units shall be listed in accordance with UL294.
    - 7) Entrance doors in building with an occupancy in groups A, B, I-2, or M shall not be secured from the egress side during periods that the building is open to the general public.
  - B. Delayed egress lock installations shall conform to all of the following (CBC 1010.1.9.7):
    - 1) Occupants shall not be required to pass through more than one door equipped with a delayed egress lock before entering an exit.
    - 2) The doors shall unlock upon any of the following conditions:
      - a. Activation of the fire sprinkler system
      - b. Activation of the smoke detection system
      - c. Operation of an opening switch provided in an approved location
      - d. Loss of electrical power to any of the following: the egress-control device, the smoke detection system, emergency lighting

- e. Activation of the door latching hardware
    - (a) The latch shall be released within 15 seconds of applying not more than 15 pounds of force for 3 seconds. A delay of 30 seconds is permitted for facilities housing Alzheimer's or dementia clients. The time delay shall not be field adjustable.
    - (b) The unlatching shall not require more than one operation and shall be irreversible.
  - f. Initiation of the unlatching sequence shall activate an audible signal in the vicinity of the door
- 3) Emergency lighting shall be provided at the door.
  - 4) Regardless of the means of deactivation, the door shall be relocked by manual means only at the door.
  - 5) A sign shall be posted on the door within 12 inches above the release device reading "KEEP PUSHING. THIS DOOR WILL OPEN IN 15 SECONDS. ALARM WILL SOUND." If the facility houses Alzheimer's or dementia clients, the sign may read: "KEEP PUSHING. THIS DOOR WILL OPEN IN 30 SECONDS. ALARM WILL SOUND." Sign letters shall be at least 1 inch in height and shall have a stroke of not less than 1/8 inch. A tactile sign shall also be provided which complies with CBC 11.
- C. Access-controlled elevator lobby egress doors shall conform to the following:
- 1) The installation of such devices shall be subject to approval by the fire official:
    - a. Installations are limited to buildings classified as Group B occupancies.
    - b. The building shall be protected throughout by an approved automatic fire sprinkler system.
  - 2) Elevator Lobby Doors – The lobby door(s) shall meet the following minimum requirements: (CBC 1010.1.9.12)
    - a. A smoke detector shall be installed on the tenant side of the elevator lobby doors within 5 feet of the center of the door. Activation of the smoke detector will release all door locking hardware. If the building is equipped with a fire alarm system, the smoke detector shall be tied into the fire alarm system. If the building is fire sprinkler monitored only, then the smoke detector can be tied into the monitoring system or it can be wired to standalone (monitored systems or standalone installations shall be supervisory signal only).
    - b. A remote master switch capable of unlocking the elevator lobby doors shall be provided in the fire command center (FCC).

- 3) Elevator Lobby Communication – Each elevator lobby equipped with an access-control device shall be provided with the following communication capabilities:
  - a. Each elevator lobby door or set of doors serving as a means of egress for the lobby or other area shall be equipped with an Underwriter’s Laboratory (UL) and California State Fire Marshal (CSFM) listed fail-safe locking mechanism.
  - b. The lock device shall be designed to automatically release under any of the following conditions at a minimum:
    - (a) Electrical power failure to the egress-control lock device
    - (b) Activation of the sprinkler system or an alarm device (detector, manual pull, etc.) on the floor(s) served by the lobby.
    - (c) Activation of the emergency release button adjacent to the door. Activation of one button shall simultaneously unlock all such doors where buttons are required
    - (d) Locking device shall unlock under any of the preceding conditions, but not unlatch
    - (e) Relocking shall be by manual means at the door
  - c. Emergency Button – an approved momentary mushroom-shaped palm button shall be installed adjacent to each locked elevator lobby exit door. The button shall be mounted 48” above the floor to the centerline of the button.
- 4) Signs – OCFAs approved signs shall be provided:
  - a. A sign shall be provided adjacent to the elevator lobby communication system.
    - (a) The sign shall identify the communication system and provide simple directions indicating how to operate it. Instructions shall include the verbiage: “IN THE EVENT COMMUNICATION CANNOT BE ESTABLISHED, OR IF AN EMERGENCY EXISTS, PUSH THE EMERGENCY BUTTON NEAR THE DOOR.”
    - (b) (Tactile Signage-where visual signs are required, tactile signage complying with CBC 11 shall also be provided).
    - (c) Letters shall be white on red background. Letters shall be at least 3/4 inch in height and have a stroke of not less than 1/8 inch.
  - b. A sign shall be provided adjacent to each emergency release button.
    - (a) The sign shall state, “IN CASE OF EMERGENCY, PUSH PALM BUTTON. DOOR WILL UNLOCK AND SECURITY ALARM WILL SOUND.”
    - (b) (Tactile Signage-where visual signs are required, tactile signage complying with CBC 11 shall also be provided).
    - (c) Letters shall be white on red background. Letters shall be at least 3/4 inch in height and have a stroke of not less than 1/8 inch.

- D. Electromagnetically locked egress doors shall conform to the following:
- 1) Hardware shall be listed for the intended use and incorporate a built-in switch.
  - 2) The hardware mounted on the door leaf shall have an obvious method of operation and be capable of being operated with one hand under all lighting conditions.
  - 3) Operation of the hardware releases the electromagnetic lock immediately. Opening of the door shall not require a second, separate unlocking/unlatching action per CBC 1010.1.9.5.
  - 4) Loss of power to the hardware automatically unlocks the door.
  - 5) Where panic or fire exit hardware is required per CFC 1010.1.10, activation of the hardware will release the electromagnetic lock.
- E. Interconnection to sprinkler and alarm systems—Where the building or tenant space is equipped with a sprinkler or alarm system, regardless of whether the system is mandatory, it shall be interconnected to release access-controlled egress, elevator lobby, and delayed egress lock devices. Electromagnetically locked doors are not required to be interconnected, but shall be openable in the direction of egress travel without the need for any special tools or knowledge regardless of the status of the sprinkler, alarm or building power systems.
- F. Tactile Signage—where visual signs are required, tactile signage complying with CBC 11 shall also be provided.

4. OCFA Notes for Special Egress-Control Devices

Place the following notes on the plan, verbatim. Include only those notes from the section pertaining to the type of special egress-control device(s) used.

**Sensor-released egress door installations:**

1. The sensor shall be installed on the egress side where it can detect an occupant approaching the doors.
2. The doors shall unlock by a signal from the door sensor.
3. Loss of power to the lock/locking system and/or sensor shall automatically unlock the doors.
4. The doors shall unlock via a manual unlocking device located 40-48 inches above the floor and within 5 feet of the doors. Operation of the manual unlocking device shall be independent of the access control system electronics. The door shall remain unlocked for at least 30 seconds.
5. The manual unlocking device shall be readily accessible and provided with a sign that reads "PUSH TO EXIT." A tactile sign shall also be provided that complies with CBC Chapter 11.
6. Activation of the fire sprinkler, detection, or alarm system, where present, shall automatically unlock the doors. They shall remain unlocked until the alarm system has been reset.
7. The locking system shall be listed in accordance with UL 294.
8. Devices installed on fire rated door assemblies shall be listed for such application.

**Delayed egress lock installations:**

1. The doors shall unlock upon any of the following conditions: activation of the fire sprinkler system; activation of the smoke detection system; operation of an opening switch at an approved location; loss of power to egress control device/smoke detection system/emergency lighting; activation of the door latching hardware
2. The latch shall be released within 15 seconds of applying force for 3 seconds to the door latching hardware. A delay of 30 seconds is permitted for facilities housing Alzheimer's or dementia clients. The time delay shall not be field adjustable.
3. The unlatching shall not require more than one operation and shall be irreversible.
4. Initiation of the unlatching sequence shall activate an audible signal in the vicinity of the door.
5. Emergency lighting shall be provided at the door.
6. The door shall be relocked by manual means only at the door.
7. A sign shall be posted on the door above and within 12 inches of the release device reading "KEEP PUSHING [PULLING]. THIS DOOR WILL OPEN IN 15 [30] SECONDS. ALARM WILL SOUND." Sign letters shall be at least 1 inch in height and shall have a stroke of not less than 1/8 inch. A tactile sign shall also be provided that complies with CBC Chapter 11.
8. Egress-control devices shall be listed in accordance with UL 294.

**Elevator lobby egress-control devices:**

1. Elevator lobby door(s) shall be equipped with a UL and CSFM listed fail-safe locking mechanism.
2. Such devices shall be installed only in buildings protected throughout by automatic fire sprinkler system.
3. The lock device shall be designed to release under any of the following conditions: power failure to the access-control lock device; activation of fire sprinkler or alarm system; activation of the emergency release button; a remote master switch in the fire command center or other approved location if a FCC is not present. Regardless of the means of deactivation, re-locking of the lock device shall be by manual means only at the door.
4. Elevator lobby shall be provided with direct two-way communication capability between the elevator lobby and a constantly attended location with the capability to remotely unlock the door(s). A sign shall be provided adjacent to the elevator lobby communication system providing simple operating instructions. It shall also state "IN THE EVENT COMMUNICATION CANNOT BE ESTABLISHED, OR IF AN EMERGENCY EXISTS, PUSH THE EMERGENCY ALARM BUTTON."
5. A release button shall be provided at each locked door 48" above the floor. A sign stating "IN CASE OF EMERGENCY, PUSH PALM BUTTON. DOOR WILL UNLOCK AND SECURITY ALARM WILL SOUND" shall be provided adjacent to the emergency alarm button.
6. Letters on signs shall be at least 3/4 inch in height, and have a stroke of not less than 1/8 inch and contrast with their background. Tactile signs shall also be provided that comply with CBC Chapter 11.
7. Egress-control devices installed on fire rated door assemblies shall be listed for such application.
8. A smoke detector shall be installed on the tenant side of the elevator lobby doors within 1 to 5 feet of the centerline of the door opening. Activation of the smoke detector will release all door locking hardware. If the building is equipped with a fire alarm system it shall be tied into the fire alarm system. The smoke detector can be tied into fire sprinkler monitoring panel or it can be wired as a standalone device. (Monitoring systems shall send a supervisory signal only).

**Electromagnetically locked egress doors:**

1. Hardware shall be listed for the intended use and incorporate a built-in switch.
2. The hardware shall have an obvious method of operation and be capable of being operated with one hand under all lighting conditions.
3. Operation of the hardware shall release the electromagnetic lock immediately. Opening of the door shall not require a second, separate unlocking/unlatching.
4. Loss of power to the hardware shall automatically unlock the door.
5. Where panic or fire exit hardware is required, activation of the hardware will release the electromagnetic lock.