

# INTERNATIONAL BUILDING CODE EXCERPTS

UPDATED WITH RECENT CODE CHANGES THAT IMPACT ELECTROMAGNETIC LOCKS

## IBC/IFC

### Access Controlled Egress Doors

Found in all years of IBC and IFC, Access Controlled Egress Doors is a carry-over from the legacy codes of the '80s and '90s. Originally submitted as an alternative code for use with maglocks and all-glass doors, it provides an egress alternative for maglocks used with existing door hardware. Electrification of door hardware and its control by computers and software resulted in additional concerns about egress safety. During the first few years of IBC/IFC, (2000, 2001 Supplement, 2003, 2004 Supplement, and 2006) this was the only arrangement accepted by IBC for the release of maglocks. Because of security tie-in with the fire alarm system, and "sensor" unlocking doors when people are near, it limited an electromagnetically locked door from providing security and protection. Also, due to non-specific wording regarding the type of lock it referenced, it has led to creative and sometimes expensive interpretation.

**IBC 1008.1.4.4** Access-controlled egress doors. The entrance doors in a means of egress in buildings with an occupancy in Group A, B, E, I-2, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, E, I-2, R-1 or R-2 are permitted to be equipped with an approved entrance and egress access control system which shall be installed in accordance with all of the following criteria:

1. A sensor shall be provided on the egress side arranged to detect an occupant approaching the doors. The doors shall be arranged to unlock by a signal from or loss of power to the sensor.
2. Loss of power to that part of the access control system which unlocks the doors shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches to 48 inches (1016mm to 1219mm) vertically above the floor and within 5 feet (1524mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign that reads "PUSH TO EXIT." When operated, the manual unlocking device shall result in direct interruption of power to the lock—Independent of the access control system electronics—and the doors shall remain unlocked for a minimum of 30 seconds.
4. Activation of the building fire alarm system, if provided, shall automatically unlock the doors, and the doors shall remain unlocked until the fire alarm system has been reset.
5. Activation of the building automatic sprinkler or fire detection system, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the fire alarm system has been reset.
6. Entrance doors in buildings with an occupancy in Group A, B, E or M shall not be secured from the egress side during periods that the building is open to the general public.

#### What this means in basic terms:

- Use a motion detector (XMS), a button/timer (EEB), and connect the power to the fire and sprinkler system for release upon alarm. It cannot rearm until the fire and sprinkler systems are reset.
- Mount the button/timer within ADA guidelines not more than 5 feet from the door.
- Do not use in use and occupancy groups not scheduled in the code.

**IBC/IFC 2007 Supplement and 2009**  
**"Finally – some relief and clarification"**

**IBC 1008.1.8.7** Electromagnetically locked egress doors. Doors in the means of egress that are not otherwise required to have panic hardware in buildings with an occupancy in Group A, B, E, M, R-1, or R-2 and doors to tenant spaces in Group A, B, E, M, R-1 or R-2 shall be permitted to be electromagnetically locked if equipped with listed hardware that incorporates a built-in switch and meet the requirements below:

1. The listed hardware that is affixed to the door leaf has an obvious method of operation that is readily operated under all lighting conditions.
2. The listed hardware is capable of being operated with one hand.
3. Operation of the listed hardware directly releases the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the listed hardware automatically unlocks the door.

**What this means in basic terms:**

- Use of scheduled hardware that incorporates a built-in switch can release an electromagnetic lock as long as it can be operated with one hand and its method of operation is common knowledge.
- Opening is within the use and occupancy limitations of the code.
- There are no tie-in requirements with the alarm and sprinkler systems.
- There are no button or sensor requirements.
- Bars and panic bars with switches may be used as long as the *use and occupancy* of the space does not require panic hardware (egress of 50 or more people), see 1008.1.10.

**IBC/IFC 2012**  
**"It get's even better"**

**1008.1.9.8 (IFC [B] 1008.1.9.8)** Electromagnetically locked egress doors. Doors in the means of egress in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and doors to tenant spaces in Group A, B, E, M, R-1 or R-2 shall be permitted to be electromagnetically locked if equipped with listed hardware that incorporates a built-in switch and meet the requirements below:

1. The listed hardware that is affixed to the door has an obvious method of operation that is readily operated under all lighting conditions.
2. The listed hardware is capable of being operated with one hand.
3. Operation of the listed hardware directly interrupts the power to the electromagnetic lock and unlocks the door immediately.
4. Loss of power to the listed hardware automatically unlocks the door.
5. Where panic or fire exit hardware is required by section 1008.1.10, operation of the listed panic or fire exit hardware also releases the electromagnetic lock.

**What this means in basic terms:**

- Use of scheduled hardware that incorporates a built-in switch can release an electromagnetic lock as long as it can be operated with one hand and its method of operation is common knowledge.
- Opening is within the *use and occupancy* limitations of the code.
- There are no tie-in requirements with the fire and sprinkler systems.
- There are no button or sensor requirements.