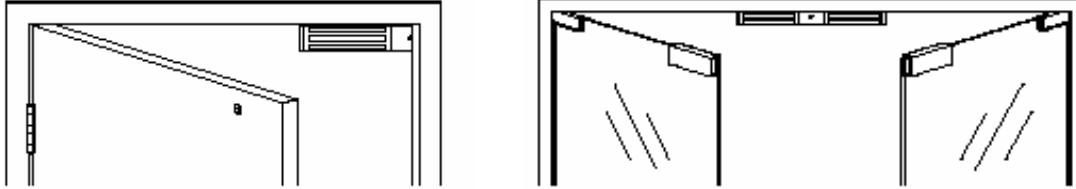




# THE REALITY TO USING MAGNETIC LOCKS ON DOORS



Are you using these devices?

Where you aware that many installations are in violation of Code and a Risk to Life Safety!

## Common Issues with Magnetic Locking Devices for Access Control:

1. Only allowed on entrance doors to a building or to a tenant space. Prohibited on stair doors or secondary exits out of spaces/buildings. Magnetic locks are prohibited in Institutional (health care, day care, etc.) occupancies unless used under more restrictive 15 second delayed egress criteria of IBC 1003.3.1.8.2.
2. A listed motion sensor is required to detect an occupant approaching the door and unlock the door before the occupant reaches the door. (The 1999 Arkansas Fire Prevention Code allowed for a listed mechanical device such as panic bar with internal switch (in addition to wall switch) to release the lock.)
3. A manual unlocking device mounted on wall (wall switch) for emergency purposes and must directly interrupt power to locks without going through access control system.
4. Locking devices must not be energized during normal business hours in Assembly, Business, Mercantile, and Educational occupancies.
5. We always hear that “the doors will open upon a fire alarm”. Although this is a requirement, today’s higher risk to life safety in the workplace is of disgruntled employees or spouses with weapons, and not that of fire. Buildings must have unrestricted egress per the code.
6. No egress door can require the use of special knowledge or tools during business hours.

**Solution:** Install per code, use Electric strike with standard door hardware, or use a similar approved device that provides unrestricted egress without special knowledge.

## Current Code Requirements

(International Building Code/2002 Arkansas Fire Prevention Code) 1003.3.1.3.4 Access-controlled egress doors. The entrance doors in a means of egress in buildings with an occupancy in Group A, B, E, M, R-1 or R-2 and entrance doors to tenant spaces in occupancies in Groups A, B, E, M, R-1 and 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 locks the doors shall automatically unlock the doors.
3. The doors shall be arranged to unlock from a manual unlocking device located 40 inches (1016 mm) to 48 inches (1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign. 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.

*Code Commentary and previous code criteria on next page.*

## **Commentary from the International Building Code.**

The following are statements taken from the IBC commentary for clarification of the code requirements. This criterion has also been clarified by interpretation services of the International Code Council.

*“Item 1 requires that such doors be provided with an automatic exit sensor typically operating on an infrared, microwave or sonic principle. This sensor is required to release automatically the lock upon an occupant approaching the door.”*

*“Item 6 requires that during the hours the building is open to the general public, doors equipped with an access control system will not be secured from the egress side in Group A, B, E and M occupancies. Thus, the building entrance doors in these occupancies are allowed to be secured only during off hours when the building occupant load will generally be reduced.”*

The automatic sensor is required in addition to the manual switch outlined in item 3. Item 6 provides that when buildings are normally open to public use, the magnetic locks shall be programmed to not be energized even if the motion sensor provides automatic release. Buildings not normally open to general public access can be secured as long as items 1 through 5 are satisfied.

Even though a building or fire official has not enforced or caught a code violation does not mean it is legal or satisfies the code. A formal written Modification is required per IBC 104.10 to modify protection from adopted code. Also see IBC 109.1 for an authority’s release of liability for missing/allowing a violation.

## **Code criteria from previous 1999 Arkansas Fire Prevention Code for access control systems:**

**(This 1999 version is provided to show that it has been in the code for some time) 1012.7 Access Controlled Egress doors.** The entrance doors in a means of egress in Group B, M, R1 or R2 buildings and entrance doors to tenant spaces of Groups B, M, R1 and R2 are permitted to be equipped with an approved entrance and egress access control system which meets all of the following:

1. An approved listed releasing sensor/device, either mechanical or electrical, shall be provided on the egress side arranged to detect an occupant attempting to gain egress. The doors shall be arranged to unlock by a signal from or loss of power to the releasing sensor/device.
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 be arranged to unlock from a manual unlocking device for emergency unlock purposes only. Manual unlocking devices shall be located 40 to 48 inches (1016 to 1219 mm) vertically above the floor and within 5 feet (1524 mm) of the secured doors. Ready access shall be provided to the manual unlocking device and the device shall be clearly identified by a sign. When operated, the manual unlocking device shall result in direct interruption of power to the lock, independent of the access control system electronics. Upon activation of the manual unlocking device, the doors shall remain unlocked for a minimum of 30 seconds.
4. Activation of the building fire alarm system, automatic sprinkler or smoke detection systems, if provided, shall automatically unlock the doors. The doors shall remain unlocked until the signaling systems have been reset.
5. Entrance doors in Group B or M shall not be secured from the egress side during periods that the building is open to the general public.
6. Entrance doors in buildings having a mechanical means of egress in conjunction with an electric strike shall be latched when not energized.
7. Independent standby power, if provided, is acceptable on doors having immediate egress upon activation with a listed releasing sensor/device and, if provided, tie in with the supervised automatic smoke/fire detection or automatic sprinkler system as described in 1012.6.1, Exception 1.

### Assuring Safety with Security

Technology and our needs for security have changed over the years. However, providing unrestricted egress from buildings has not. Make sure that your employees and building occupants are not compromised by security systems.

Some things to know:

- Building codes have very strict requirements to assure occupants can safely exit buildings.
- Too often security and access-control employees do not have copies of and have never been trained over the building codes or their intent.
- Building owners and managers are ultimately responsible for employee and occupant safety.
- Arkansas does not require installers of security or access-control systems to be tested or evaluated to local Building Code requirements.
- It is up to you to evaluate qualifications.
- Contract specifications can help assure your employees and occupants are safe.
- Unique situations exist and require unique solutions that are formally presented as a code modification.

Make sure your service companies are qualified and experienced with local code requirements.

Don’t just assume!

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*Composed by the Fire Protection and Life Safety Engineering Section of Cromwell A/E - Little Rock, Arkansas*