DECODED:

Doors with Access Control

From the well-known blog **idighardware.com**, Lori Greene brings some much-needed clarity to codes.

BY LORI GREENE, AHC/CDC, CCPR

QUESTION: I'M ADDING A CARD READER TO A DOOR in my facility. Am I required to follow the code section called "Access Controlled Egress Doors" since I am adding access control to this door?

Answer: An access control system installed on a door could incorporate a card reader, keypad, key switch, biometric reader or other method of providing electronic access. There are different types of locking hardware that can be installed on a door equipped with access control, and different code sections apply to each. Not every door with access control is considered an "Access Controlled Egress Door," which is the title of one section in the International Building Code (IBC) and in NFPA 101, *Life Safety Code.*

From a code standpoint, there are seven basic categories for access control hardware.

1. Access Controlled Egress Doors – This section is typically applied to doors equipped with electromagnetic locks that do not have a door-mounted device that unlocks the electromagnetic lock. For these doors, the IBC (2009, 1008.1.4.4) and NFPA 101 (2009, 7.2.1.6.2) require that the electromagnetic lock be unlocked by a sensor detecting an approaching occupant, a marked push button that unlocks the lock for 30 seconds, independent of the access control system, loss of power to the lock or sensor, and by actuation of the fire alarm/sprinkler/smoke detection system

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if the building is equipped with one. Without these release devices, an electromagnetic lock would not allow free egress.

Some jurisdictions have modified the IBC/NFPA 101 requirements for access-controlled egress doors. The local requirements may state that these doors must be registered with the local Authority Having Jurisdiction (AHJ) and/or may be inspected annually. Some jurisdictions do not allow access-controlled egress doors.

2. Controlled Access/Free Egress – This is probably the most common application for doors with access control. The access control reader limits access, but the door hardware allows free egress at all times, independent of the access control system. The door hardware may be an electrified lockset, mechanical lockset with electric strike, electrified panic hardware or other combination that allows free egress. This hardware is subject to the same requirements as standard mechanical hardware: it must be ***"readily openable from the egress side without the use of a key or special knowledge or effort"*** (IBC 2009, 1008.1.9). If the door is required to be accessible, the hardware ***"shall not require tight grasping, tight pinching or twisting of the wrist to operate"*** (IBC 2009, 1008.1.9.1), and it ***"must be installed 34" minimum and 48" maximum above the finished floor"*** (IBC 2009, 1008.1.9.2). See also NFPA 101 2009, 7.2.1.5.1, which contains similar requirements.

To support the statement that doors with this type of hardware are not considered access-controlled egress doors just because they are equipped with access control readers, there are remarks in the IBC Commentary and Annex A of NFPA 101:

- **IBC 2009 Commentary – 1008.1.4.4:** ***"An entrance door that was locked or controlled from the exterior, but allowed free egress at any time, such as with a panic bar or other standard hardware, would not be an access controlled egress door."***
- **NFPA 101 2009 Annex A – A.7.2.1.6.2:** ***"It is not the intent to require doors that restrict access but comply with 7.2.1.5.9 to comply with the access controlled egress door provisions of 7.2.1.6.2."*** (7.2.1.6.2 is the "Access Controlled Egress Doors" section, and 7.2.1.5.9 is the section that requires egress doors to have a releasing device with an obvious method of operation that is readily operable.)

3. Electromagnetically Locked Egress Doors (aka Electrically Controlled Egress Doors) – New sections were added to the 2009 editions of the IBC (1008.1.9.8) and NFPA 101 (7.2.1.5.5) to address doors with electromagnetic locks

that have a door-mounted release device. This release device is typically panic hardware or a lockset with a request-to-exit switch, or a touch-sense bar, which will release the electromagnetic lock when the door-mounted hardware is actuated. The electromagnetic lock is also required to unlock upon loss of power to the switch in the door-mounted hardware. These new sections provide another option for access control systems that incorporate electromagnetic locks, in addition to the requirements provided in the "Access Controlled Egress Doors" section.

4. Delayed Egress Locks – When there is a desire to control egress as well as access, delayed egress hardware may be used, depending on the occupancy type and other code conditions, such as a requirement for the building to be protected throughout with an automatic sprinkler system/approved automatic smoke or heat detection system. The delayed egress lock will prevent egress for 15 seconds (or 30 seconds when approved by the AHJ) when initiated by a 15-pound force but will release immediately upon fire alarm or power failure. Signage, an audible local alarm, capability of remote release, limitations on the number of delays in an egress route, and emergency lighting are other conditions for use of delayed egress locks. There are variations between the IBC (2009, 1008.1.9.7) and NFPA 101 (2009, 7.2.1.6.1) in regard to delayed egress locks–for example, the amount of time the activating force may be applied: one second for the IBC, and three seconds for NFPA 101. In addition, the IBC prohibits the use of delayed egress locks on Assembly, Educational, and High Hazard occupancies, while NFPA 101 has different stipulations for occupancy classifications where delayed egress locks are allowed.

5. Stairwell Doors Providing Reentry – In most cases, the IBC requires all stair doors that are locked (with the exception of the stair discharge door) to allow re-entry during a fire alarm. This means that a stair door that normally would be kept locked on the stair side for security will be unlocked during a fire so that a building occupant can leave the stair, if it becomes compromised, and seek another exit. These unlocked stair doors also allow firefighters access to each floor. The 2003 edition of the IBC allows mechanical locks on the stair side of doors serving four stories or fewer, but this exception has been removed from the later editions.

To accomplish this, fail-safe locks are installed, which allow free egress to the stair at all times and can be remotely controlled from the fire command center or the fire alarm system to allow access from the stair side. These fail-safe locks remain latched when they are unlocked, as required for fire doors. NFPA 101 (2009, 7.2.1.5.7) has slightly different requirements for stairwell re-entry from the IBC (2009, 1008.1.9.10 and 403.5.3), including an exception that allows stairs serving four stories or fewer to be mechanically locked on the stair side, as well as a set of conditions called "Selected Reentry."

6. Elevator Lobby Doors – When an elevator lobby does not have direct access to a stairwell, egress through the tenant space to an exit may be required. The 2009 edition of NFPA 101 addresses this in a new section: 7.2.1.6.3 Elevator Lobby Exit Access Door Assemblies Locking. The IBC does not have a separate section pertaining to the locks on elevator lobbies but states, ***"Elevator lobbies shall have at least one means of egress complying with Chapter 10 and other provisions within this code"*** (IBC 2009, 708.14.1). One way of providing egress in compliance with Chapter 10 of the IBC is to use delayed egress locks, but this application reduces security and requires signage that can be confusing when mounted on a door that is typically used for entrance to the tenant space. Some state and local codes have adopted requirements for elevator lobby doors that are similar to the NFPA 101 requirements.

7. I-2 Special Egress Locks – The 2009 editions of the IBC (1008.1.9.6) and NFPA 101 (18.2.2.2.5) contain new requirements pertaining to the locking of egress doors in certain units within healthcare facilities, where the clinical needs of those receiving care require such locking. The new sections describe locks that unlock upon actuation of the fire alarm/sprinkler system/power failure, are capable of being unlocked remotely, and can be unlocked by clinical staff at all times.

As you can see, the applications that are actually access-controlled egress doors are quite limited. When considering which code requirements to follow, first identify which category the hardware falls into, and refer to the applicable section. This summary is not intended to provide complete information about each of the types of access control doors referenced. For more information, refer to the referenced codes or the related articles on iDigHardware.com. dh

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