Electronic Door Locks – Life Safety Vs. Security

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In 1927, the National Fire Protection Association published the first "Building Exits Code" which, through recurring revisions, was renamed the "Life Safety Code" in 1966. Provisions for exit access, numbers of exits, and exit details are fundamental to life safety. The primary strategy for fire life safety is to escape before time runs out, or, in other words, escape before the environmental conditions become lethal. Faster fire growth equals less time available to escape. Health Care occupancies are depicted as "defend in place" but that is NOT totally accurate. What we really mean is "defend in a safe place." Very often that means we must quickly move patients and other occupants to a safe place, beyond smoke barrier or horizontal exit doors, into the exit stairways, or to the outside. Any door hardware that requires the use of a key, tool, special knowledge or effort restricts the flow of people and increases the time required to get to a place of safety. Door hardware, an electromagnetic lock, or even a special sign that might restrict the use of a door in a means of egress, are suspect of violating Code.

The Life Safety Code has strict provisions for door hardware. Unfortunately, new door locking technologies marketed to help resolve security and patient care challenges often violate Code. The Life Safety Code "Technical Committee on Means of Egress" worked very hard to establish Code language that balances the needs for security and life safety. That debate is concluded at the national level. You need not debate locally. Building owners, CEOs, facilities managers, engineers, and safety officers are responsible for making sure all door hardware complies with Code and is maintained.

Life Safety Code (NFPA 101 2000 Edition) requirements for doors in a means of egress, specific to latching and locking, can be found in Sections 7.2.1.5.1, 7.2.1.5.4, 7.2.1.5.6, 7.2.1.6.1, 7.2.1.6.2, 7.2.1.7.3, 18.1.1.1.5, 18.2.2.2.2, 18.2.2.2.4, and 18.2.2.2.5. The following summarizes the rules allowing three special locking exceptions for health care occupancies. But, the devil is in the details. Always refer to the Code for exact language when evaluating door hardware/locking configurations.

Exception number 1, Clinical Needs; specific to Health Care occupancies, (Section 18.2.2.2.4) doors in a means of egress are permitted to be locked in the direction of egress where the *clinical needs* of the patients require special security measures for their safety. Exception #1 cannot be applied if the door serves non-patient areas. This was originally intended for psychiatric patients, but has been expanded to include other *clinical needs* such as severe dementia and Alzheimer's. Locking doors should be taken very seriously. The authors strongly recommend, for cases where exception #1 is applied, the Chief Medical Director (Chief

of Staff) and CEO of the health care facility sign a policy statement or memo authorizing the use of this exception. The authorization should specifically list each door to be locked. It is in the facilities manager's or engineer's best interest that someone else judges the clinical needs of the patients and takes responsibility for locked doors. Note that JCAHO Standard EC.3.1 ("other environmental concerns") requires that door locks and other structural restraints are consistent with the patients' needs and program policy. It is within this "program policy" where appropriate authorities determine and sign authorization for locked doors.

Once medical staff authorize a door to be locked, the Code requires that all staff be able to readily unlock such doors. They must carry the key at all times or have other reliable means to "readily unlock" the doors (Section 18.2.2.2.4 exception #1). Key deadbolts, magnetic locks with keypad code release, push button release, card swipe or any other reliable means to unlock doors are permitted. For example, the "wonder guard" bracelet system is permitted as long as staff can readily override the system and unlock the door. Unlocking a door by fire alarm system only is not Code complying.

Exception number 2, Delayed-Egress Locks; a door in means of egress may be equipped with a delayed-egress (electromagnetic lock) system in accordance with Section 7.2.1.6.1 provided all of the following Code requirements are met:

1) entire building must be either fully protected by sprinklers or equipped throughout with a complete smoke detection system (Section 9.6.2.8);
2) for health care, only one such delay device may be installed in any egress path;
3) door(s) must serve low or ordinary hazard space;
4) automatically unlock upon sprinkler system activation or any two smoke detectors activating (if complete building smoke detection option is used);
5) automatically unlock upon power failure;
6) immediately sound an audible signal at the door and unlock within 15 seconds (30 sec special approval) of pushing on release device;
7) have special signage per subparagraph (e) to 7.2.1.6.1.

If your building is not fully sprinkler protected, you most likely cannot use delayed egress locks, because buildings are rarely equipped with a complete smoke detection system, i.e. smoke detectors in all occupiable areas.

Exception number 3, Access-Controlled Egress Doors; doors in a means of egress may be equipped with access-controlled electromagnetic locks, or an electronic release strike plate if access is controlled only from the outside in; for example, staff using a code pad or swipe card to enter. In this case full sprinkler protection is not required because there is no delay in exiting. Numerous other safeguards are required under Section 7.2.1.6.2 to assure the door automatically releases, without delay, in the direction of egress:

1) a sensor on egress side detects occupant approaching and unlocks the door;
2) the door automatically unlocks upon power failure;
3) a manual release button, marked "Push to Exit," is provided within 5 feet of the door that directly interrupts power to the lock;

4) the door automatically unlocks upon activation of the building fire alarm system and upon sprinkler system activation if provided.

An example of the need for the manual release button is “touch sensitive” hardware, usually a bar looking like panic hardware. If an occupant attempts to leave wearing gloves or pushes against the bar with a clothed part of their body, the release mechanism does not function. The individual would then have to operate the “Push to Exit” button.

Beware of special signage or “temporary” obstructions blocking egress paths. Signs such as “Emergency Exit Only, Use Front Door” might be acceptable, but “Exit Closed - Use Front Door” or “No Exit – Use Front Door" are not. These signs have been more prevalent recently due to heightened security.

Health care facility managers and safety staff are facing new challenges as security officials attempt to “lock-down” buildings. Doors may always be locked from the outside in. However, for doors in a means of egress, the three locking options outlined above are the only ones permitted.