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ABSTRACT:

When is an electric strike not an electric strike? When it is a euphemism for a secure door. Knowing what function is required is paramount. Function will dictate what devices are needed. So what should be considered when specifying a secure door?

FILING:

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Door Security

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Electric Strike! Really?

Door security can range from simple keyed functions to electronic access regulated by a central control system. The Owner's requirements must be fully understood to know what type system will serve the needs best. When beginning hardware specifications, often doors requiring electric strikes or card readers are identified in the door schedule. Typically, the mention of these devices represents a need for a form of electronic security, not a specific device. Naming the device is a convenient way to convey a need for additional security.

How can you tell what is really intended for the door? Avoid talking about devices. Identify the Security Doors - doors that must be controlled by some means other than a key. Then, talk about function. How must the door operate?

The Functions

Door function requirements are seemingly endless - see the sampling below. The combinations can be staggering. Every required function adds complexity. Many electronically controlled doors require microprocessors to coordinate all the functions provided by multiple devices installed on a door. Adding an automatic operator is one sure fire way to complicate the controls.

Always Secure: This is the simplest door function. The door will always require a key or an electronic switch to unlock the door.

Alarmed Egress: A variation of always secure, this function requires remote notification, local annunciation, or both when the door

is used for egress. The alarm may be shunted or disabled by use of a switch or valid credential.

Daytime Unlocked/Nighttime Locked: The electronic locking function is controlled by a time clock. The lock status will change depending on the time of day. When locked a key or an electronic switch is required to unlock the door.

Selectively Secure: Doors are normally unlocked for free passage in both directions. When an unauthorized person approaches, the door automatically locks to prevent passage. This function is often used in nursing homes to prevent dementia patients from unknowingly leaving their area of the building.

Mantrap Vestibule: A complex control system that prevents any door within the vestibule from opening when another door is already open. This function is common to control entry to spaces with valuable, sensitive, or dangerous contents. A combination of electronic locks, magnetic locks, and electric strikes may be needed to provide this control.

The door is locked, but is it secure? Unless the door is fully closed with the latchbolt engaged in the strike, the door is not secure. Switches are used to monitor the door position and the latchbolt engagement. These switches can report an open and unsecured condition so security may investigate.

The Controls

Keys:

Keys are the most basic security control. Unless the key is a patented, high security type provided directly from the lock supplier, the key can be duplicated. The key may be lost or stolen. Key control to track who has

what key becomes important - important enough that entire systems and software have evolved for this specific purpose.

Combinations:

Cipher locks are opened by entering a combination via push buttons or an electronic keypad. These locks allow many users to access the door simply with the knowledge of the correct combination. Security is compromised because it is entirely dependent on users not revealing the combination - or posting the combination next to the lock. Yes, it happens!

The recourse is to change the combination often. Each cipher lock should be set to a combination other than the factory default.

Electronic Credentials:

Virtually anything that can contain a chip or magnetic strip can be used to unlock an electrically controlled door to allow entry. Key fobs and some keys contain chips. Cards can have chips, magnetic strips or both. And let's not forget smart phones. With Bluetooth and Near Field Communication (NFC), your phone can unlock some locks too. With smart phones becoming ubiquitous, you may not be able to get through doors without one in the future. It's a smart phone, now, and maybe a chip implanted at birth for the next generation. That will prevent losing it!

Electronic Switches:

Electronic locks are controlled by switches. Switches reverse the default state - locked becomes unlocked and vice versa - or determine the current door status to control the operation sequence. Switches come in a variety of forms.

- Pushbuttons
- Presence or motion sensors
- Key switches
- Receivers for electronic credentials

- Request to exit (RX) switches
- Door position switches

The Devices

Mechanical Locks: A keyed device including tubular, cylindrical, and mortise lock types.

Cipher Locks: A lock requiring a combination to open via pushbutton or electronic keypad.

Magnetic Locks: An electromagnet that secures the door when energized. This lock requires two means for unlocking for egress, including a wall mounted pushbutton. When part of the egress path the lock must be connected to the fire alarm system to unlock on alarm.

Battery Electronic Locks: A stand-alone lock that is programmed by a portable device used at the door to establish the valid credential. The use record is retrieved also by the portable device.

Hard Wired Electronic Locks: A lock that is powered by low voltage wires running through a door hinge or a power transfer device and through the door core to the lock. The lock is connected to a central control system permitting real time access control, reporting, and programming updates.

Wireless Electronic Locks: A stand-alone battery operated lock that that communicates periodically with a receiver usually concealed above an accessible ceiling. The receiver reports the lock activity to a central station and transmits programming changes to the lock from the central station.

The lock will continue to work during power outage.

Power over Ethernet (PoE) Electronic Locks: Similar to hard wired locks, except the power source is furnished by the Ethernet wiring. These locks, because of the integral electronics, can combine functions of multiple devices into the lock, eliminating other

wiring, controls, and door and frame preparation.

Recommendations

Grab the drawings. Meet with the owner, hardware consultant, and anyone else involved with security. Identify each security door. Review each door function. Document how the door must operate. Then discuss security system and devices. Engage a qualified hardware consultant to determine what each door requires and to develop the control sequence description. Require the consultant to specify all the devices that must be mounted on the door and frame to ensure proper factory preparation without surface wiring. Finally be sure the power supply with the control module is furnished with the door hardware.

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