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Questions related to specific materials, methods, and services will be addressed at the conclusion of this presentation.

**Program Title:** Decoded: Delayed Egress vs.  
Controlled Egress

**Program Number:** CDD20021

**Provider Name:** Allegion

**AIA Provider #:** J247

**Learning Units:** 1 HSW

**Course Description:**

The possibility of elopement or theft often motivates the use of locking systems that deter passage through egress doors, but building, fire, and life safety code requirements must be met. This course will cover two types of systems used to deter egress, and the code requirements that apply to each. Understanding these systems can help to ensure that the correct components are specified and installed, and that the system will be code-compliant.

## Upon successful completion of this course participants will be able to:

- Distinguish between the locations where a delayed egress system or a controlled egress system would be most effective.
- Understand the code requirements that apply to delayed egress locks, including use groups where these locks are allowed, and required release methods.
- Recognize the code requirements for electrified controlled egress locks, and how they differ from the delayed egress requirements.
- Be familiar with the code sections addressing mechanical locking of egress doors in health care facilities, and the associated concerns.

# Decoded: Delayed Egress vs. Controlled Egress



# Delayed Egress vs. Controlled Egress

## Delayed Egress

- Releases to allow egress 15 seconds after an attempt to exit is made
- Audible alarm and signage
- Used to deter theft and elopement

## Controlled Egress

- Releases to allow egress when evacuation is needed
- No audible alarm or signage required
- Used in health care units where patients require containment for their safety or security



## How delayed egress works:

- Building occupant attempts to exit
- Actuating the hardware or moving the door starts timer
- 15 seconds (or 30 seconds) later the door will allow egress
- Immediate egress is allowed:
  - Upon actuation of fire alarm or sprinkler system
  - Upon loss of power
  - Upon remote signal



**PUSH UNTIL ALARM SOUNDS.  
DOOR CAN BE OPENED IN 15 SECONDS.**

## How controlled egress works:

- Door stays locked until egress is needed
- Immediate egress is allowed:
  - Upon actuation of fire alarm or sprinkler system
  - Upon loss of power
  - Upon remote signal
- Staff must have the ability to unlock the doors if evacuation is required

ONLY ALLOWED IN  
CERTAIN TYPES OF  
HEALTH CARE  
UNITS





# Common Applications

## Delayed Egress

- Retail stores – to deter theft
- K-12 Classrooms – to deter elopement
- Courtrooms – to deter access to judge/jury areas



## Controlled Egress

- Memory care
- Maternity & nursery
- Pediatrics
- Emergency dept.
- Behavioral health



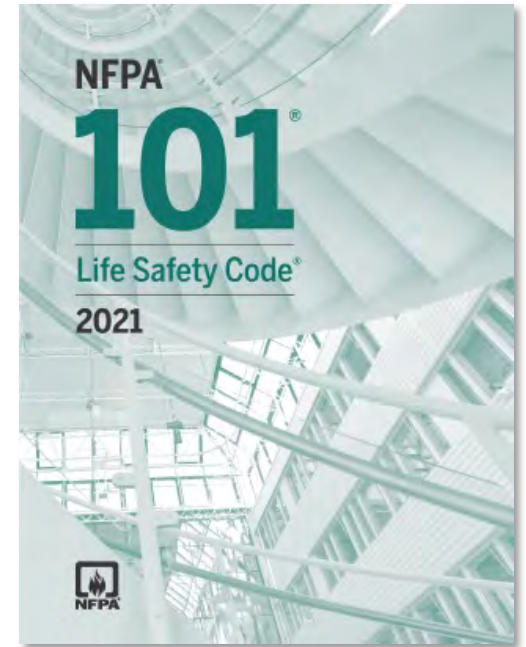
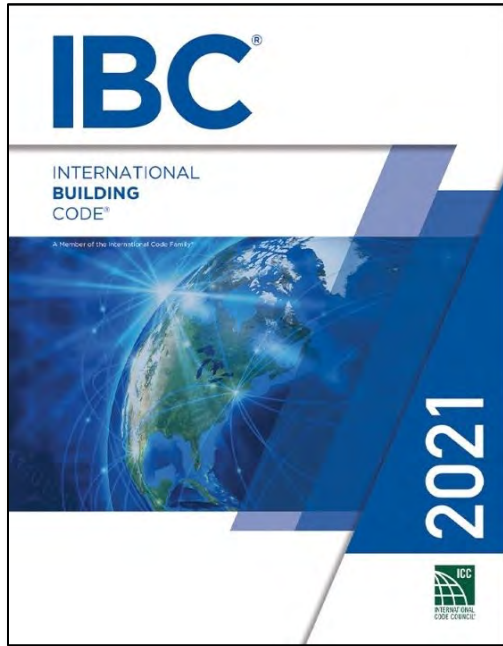
# Hardware used in delayed egress systems

- Delayed egress panic hardware
- Electromagnetic lock with delayed egress circuitry
- Electrified hardware with a delayed egress controller

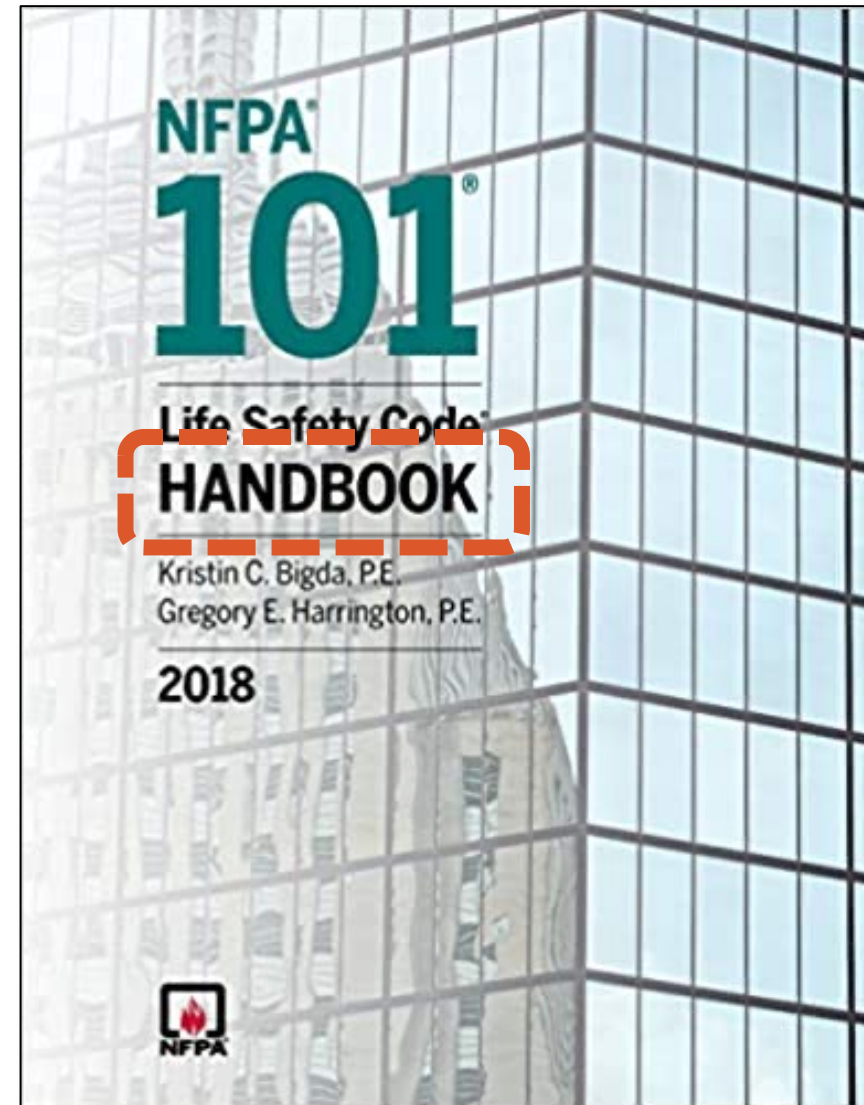
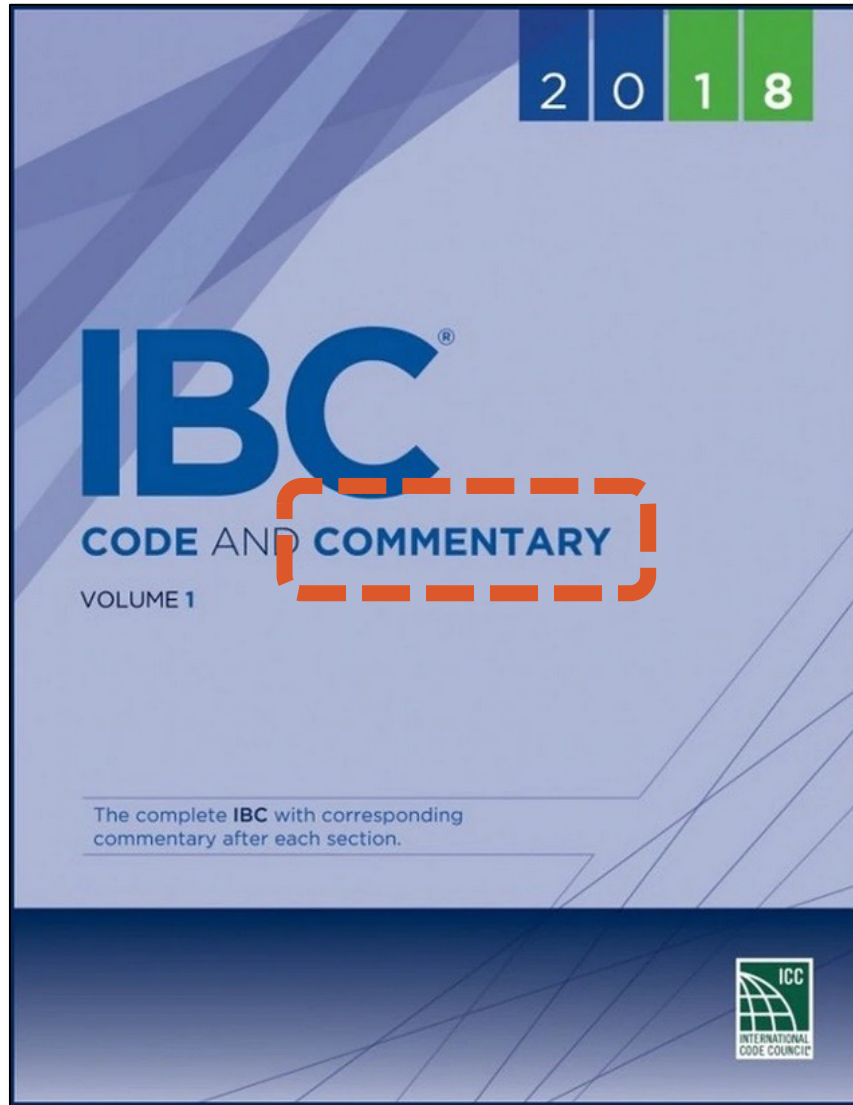




# I-Codes vs. NFPA




# Commentary and Handbook Editions




# Referenced Standards

ANSI/BHMA A156.24-2018  
Revision of BHMA A156.24 - 2012

Approved American National Standard



STANDARD  
FOR  
DELAYED EGRESS LOCKING SYSTEMS




SPONSOR  
BUILDERS HARDWARE MANUFACTURERS ASSOCIATION, INC.

AMERICAN NATIONAL STANDARDS INSTITUTE  
Approved March 29, 2018



UL 10C

STANDARD FOR SAFETY  
Positive Pressure Fire Tests of Door  
Assemblies





UL 305

STANDARD FOR SAFETY  
Panic Hardware

NFPA  
**252**

Standard Methods  
of Fire Tests of  
Door Assemblies

2017



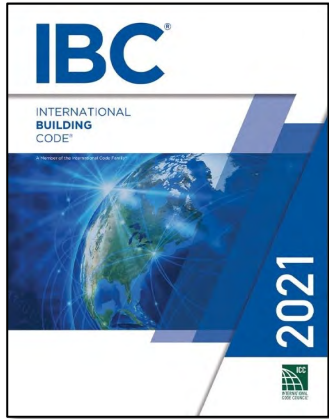
UL 294

STANDARD FOR SAFETY  
Access Control System Units

## State/local code modifications

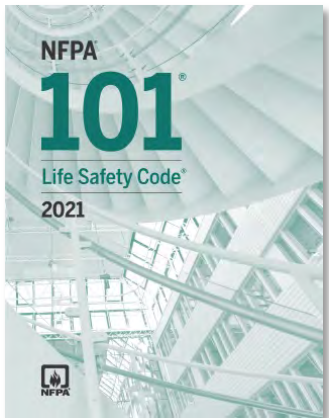


# Code Requirements Addressed for Each Application



- Applicable code sections
- Use groups / occupancy classifications
- Required fire protection systems
- Actuation time
- Automatic release delay
- Rearming after actuation
- Audible alarm
- Signage requirements

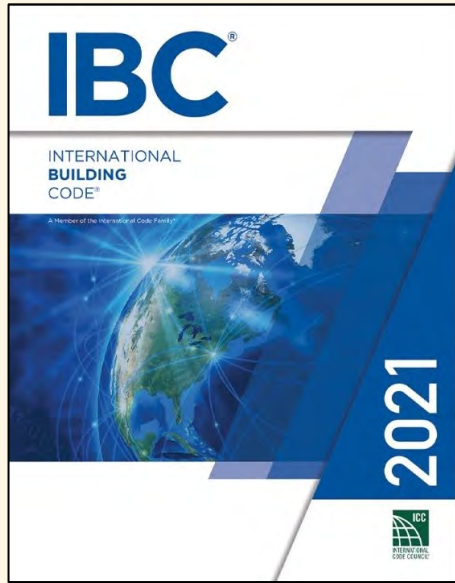
- Action upon activation of fire alarm / sprinkler system
- Action upon power failure
- Remote release
- Staff release
- Emergency lighting
- Quantity per egress path
- Required listings





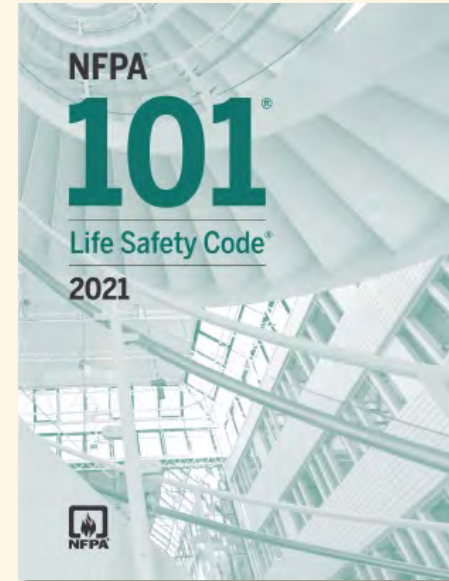
# Code requirements for delayed egress systems





## Delayed Egress

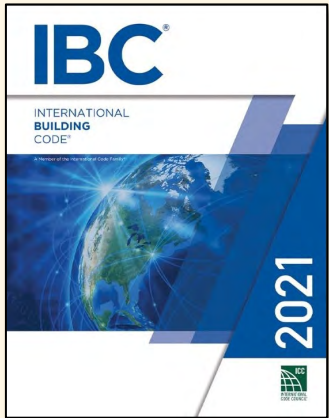
- 2021 – 1010.2.13
- 2018 – 1010.1.9.8
- 2015 – 1010.1.9.7
- 2012 – 1008.1.9.7
- 2009 – 1008.1.9.7



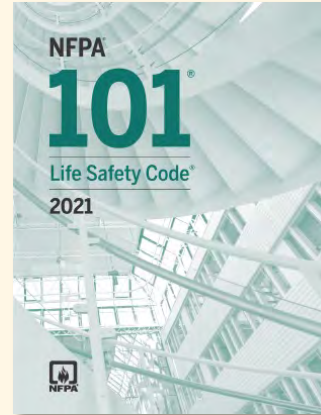
## Delayed Egress Electrical Locking systems

- 7.2.1.6.1

# DE – Use Groups / Occupancy Classifications



- Any use group except:
  - A (assembly)
  - E (educational)
  - H (high hazard)
- Changes made in 2018 IBC



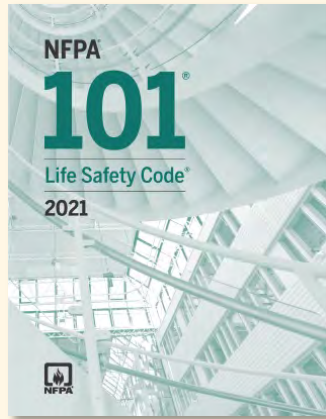
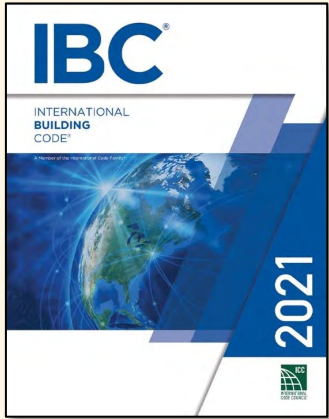
- Low and ordinary hazard contents
- Assembly - permitted except on main entrance/exit doors, not allowed on airport jetways
- Educational, Day-Care, Health Care, Ambulatory Health Care, Hotels and Dormitories, Apartment Buildings, Mercantile, Business, Industrial, Storage - permitted with no restrictions
- Lodging or Rooming Houses - limited to one delayed egress device per escape path
- Residential Board and Care - limited to exterior doors only

# DE – 2018 IBC Changes

- 2018 IBC Changes
  - Previous editions of the IBC did not allow delayed egress in assembly or educational use groups
  - Secondary exits from courtrooms - building must have sprinkler system
  - Classroom doors serving less than 50 occupants



# DE – Required Fire Protection Systems



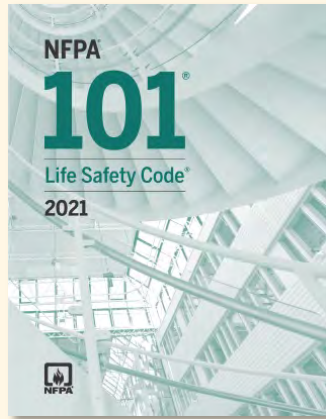
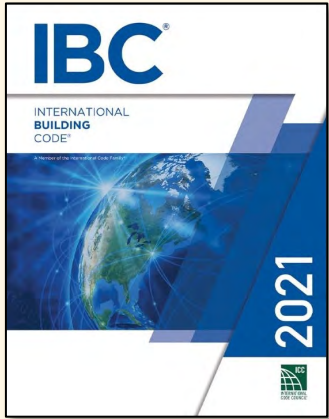
- Equipped throughout with an automatic sprinkler system or approved automatic smoke or heat detection system.



**OR**



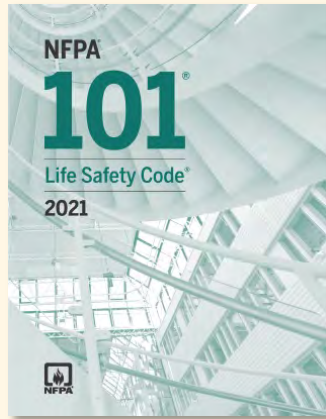
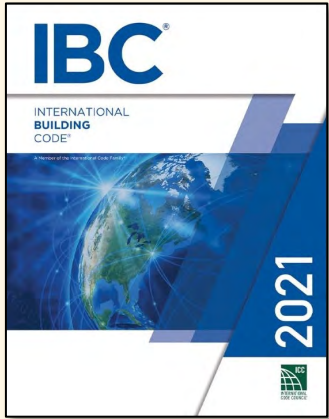
# DE – Actuation Time



- Up to 3 seconds when force of 15 pounds is applied.
- Prior to the 2015 IBC, actuation was required after 1 second.



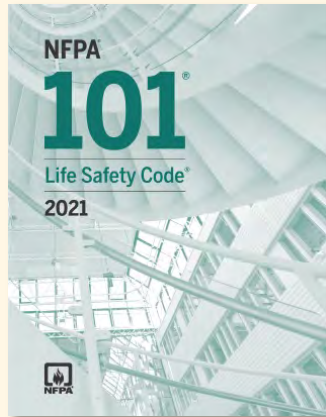
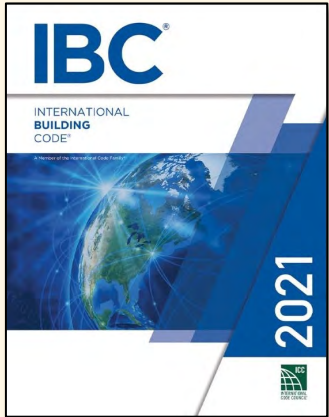
# DE – Automatic Release Delay



- 15-second delay before lock releases to allow egress (30 seconds with AHJ approval).



# DE – Automatic Release Delay



- 15-second delay before lock releases to allow egress (30 seconds with AHJ approval).



PUSH UNTIL ALARM SOUNDS.  
DOOR CAN BE OPENED IN 30 SECONDS.



# Corona shooting: Emergency-exit doors were designed to wait 15 seconds before opening

The system has been taken down for now, but not because it's illegal — it awaits outcome of a plan review



When shots rang out the night of Friday, June 14 at the [Costco in Corona](#), shoppers hustled to emergency exits.

Some [struggled with the doors](#), failing to get them open, and instead hid or quickly made their way to the main exit at the front of the store.

Those emergency doors, it turns out, were designed to not open instantly.

They were equipped with 15-second delays from when the so-called panic bar is pushed until the doors open with alarms sounding off. Signs on the doors explain this — although someone trying to escape a shooting understandably may miss them.

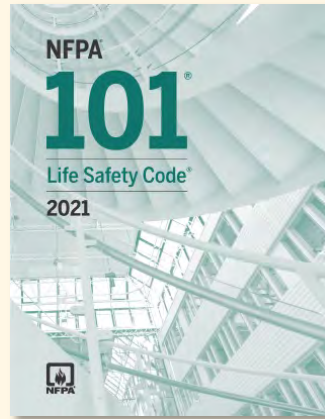
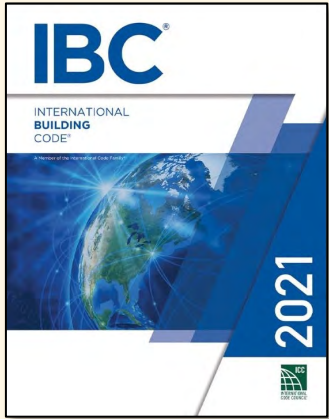
The system meets a state building code on emergency doors that Corona chose to adhere to.

At the Corona Costco, the delay system was de-activated after the shooting that left one dead because it has not yet



DELAYED  
EGRESS  
APPLICATION  
WAS CODE-  
COMPLIANT.

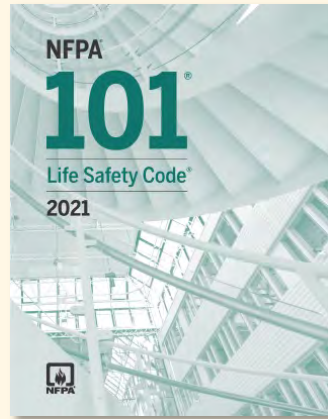
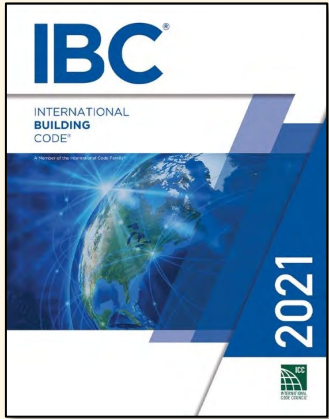
# DE – Rearming After Actuation



- Manual rearm required after 15-second timer is actuated.



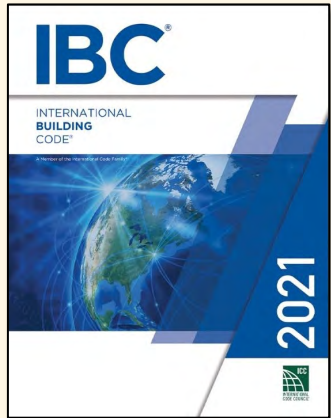
# DE – Audible Alarm



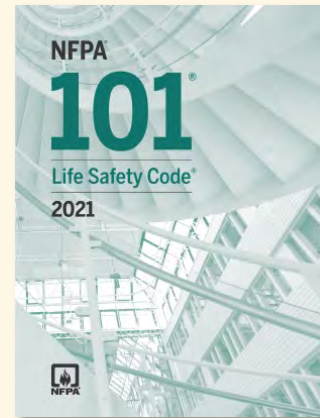
- Audible alarm required.



# DE – Signage Requirements



- Required Signage: "Push [pull] until alarm sounds. Door can be opened in 15 [30] seconds."
- Must be on the door above and within 12 inches of the door exit hardware.
- New in 2015: Signage must comply with A117.1 requirements.
- In Group I occupancies, AHJ may allow signage to be omitted for certain types of treatment areas.



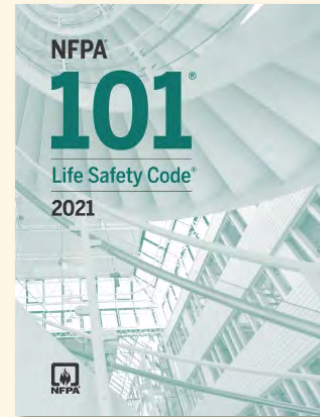
- Required Signage: "Push [pull] until alarm sounds. Door can be opened in 15 [30] seconds."
- Signage must be readily visible, durable, with letters not less than 1-inch high and 1/8-inch stroke with a contrasting background, located on the door adjacent to the release device on the egress side.

**PUSH UNTIL ALARM SOUNDS.  
DOOR CAN BE OPENED IN 15 SECONDS.**

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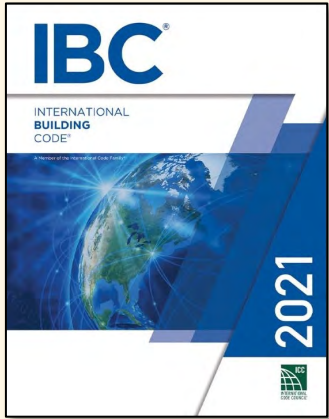
**PUSH UNTIL ALARM SOUNDS.  
DOOR CAN BE OPENED IN 15 SECONDS.**

**PUSH UNTIL ALARM SOUNDS  
DOOR CAN BE OPENED  
IN 15 MINUTES**

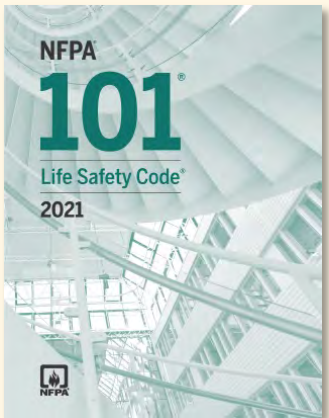
**???**

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# DE – Action upon actuation of the fire alarm or sprinkler system



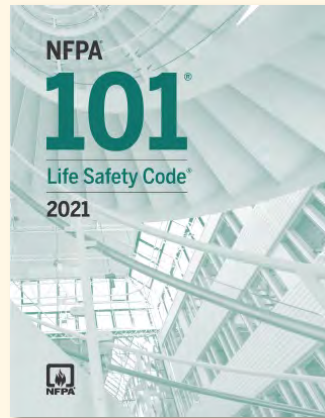
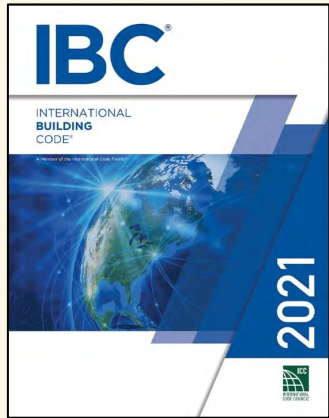
- Unlock for immediate egress – no delay.



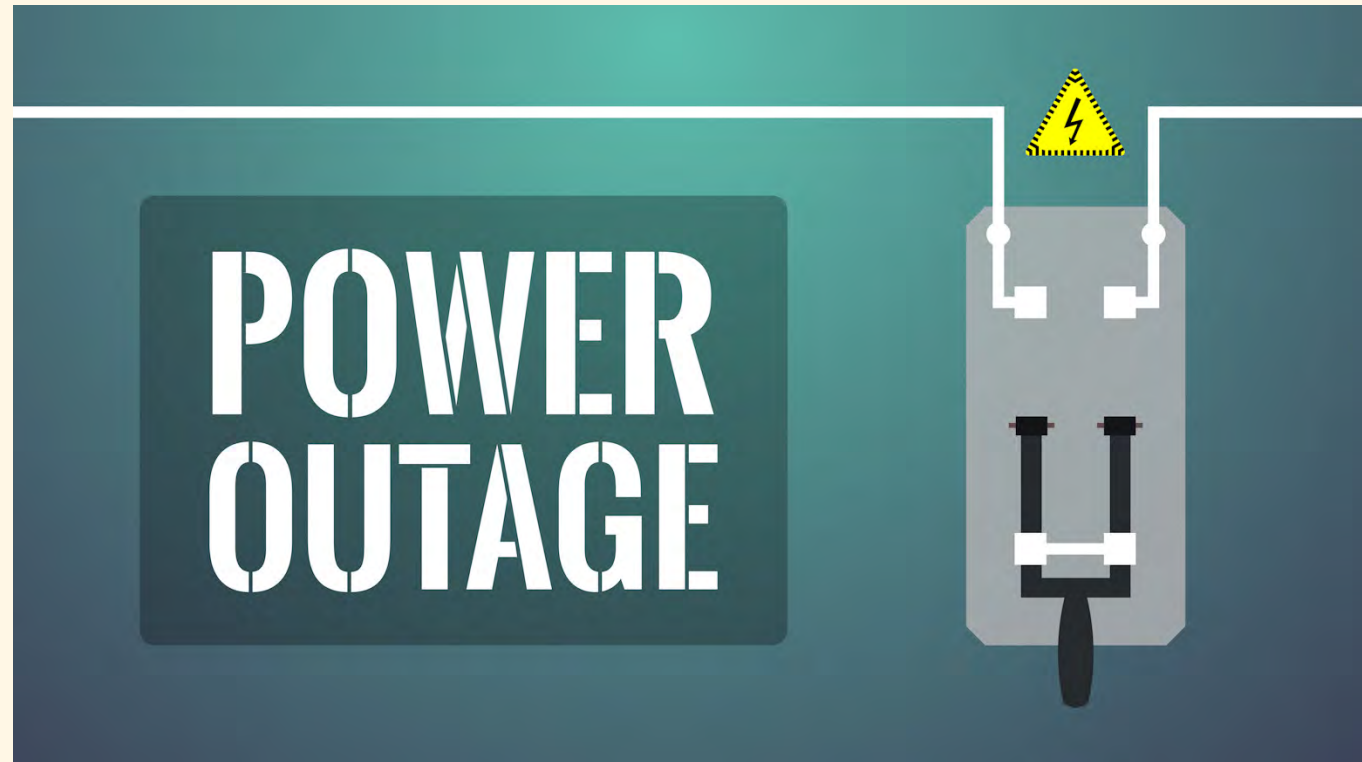
- Unlock (no delay) in the direction of egress upon actuation of sprinkler system, or not more than one heat detector, or not more than two smoke detectors



# DE – Action upon power failure

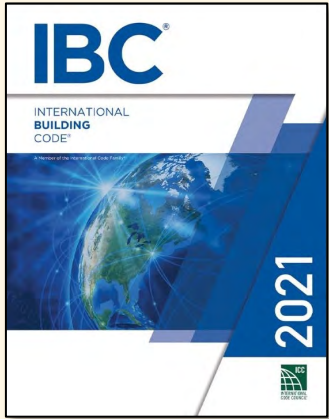


- Unlock for immediate egress - no delay.

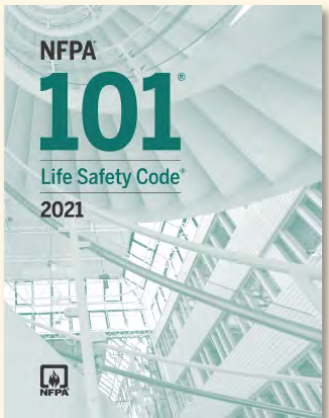




# DE – Remote Release



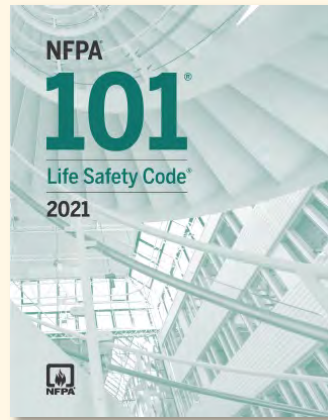
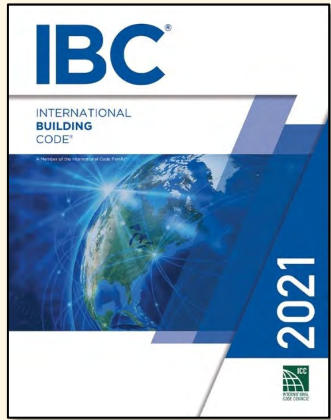
- Capable of being deactivated at the fire command center and other approved locations.



- NFPA 101 does not address remote release of delayed egress locks.



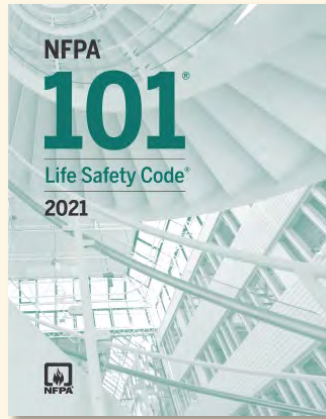
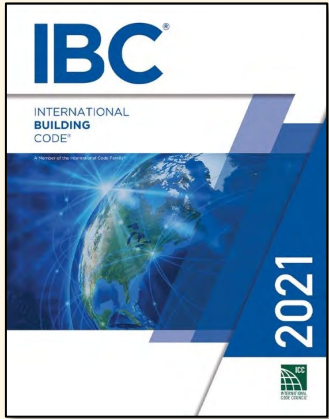
# DE – Staff Release



- Not required



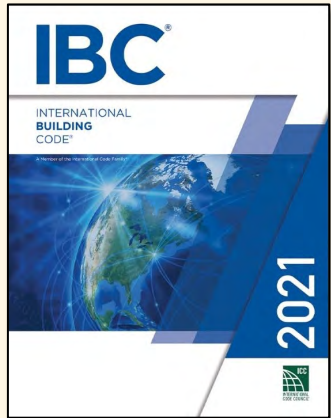
# DE – Emergency Lighting



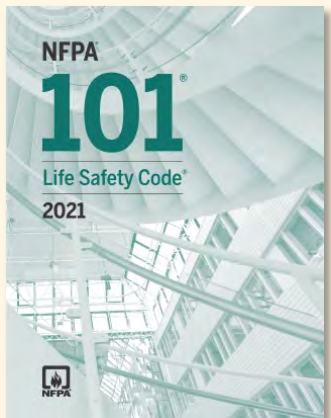
- Required on the egress side of the door



# DE – Quantity per egress path



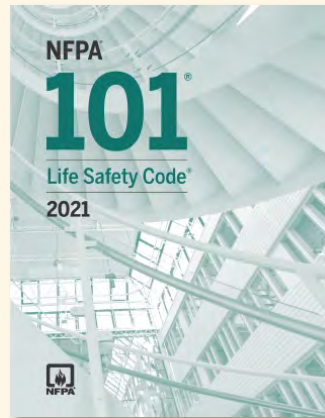
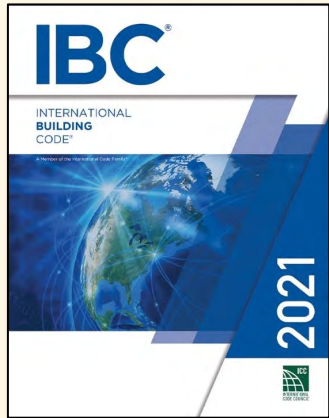
- One delayed egress lock per egress path.
- Institutional occupancies:
  - 2 doors with delayed egress locks per egress path - maximum combined delay of 30 seconds (I-1, Condition 1 or I-4 – must have sprinkler system)



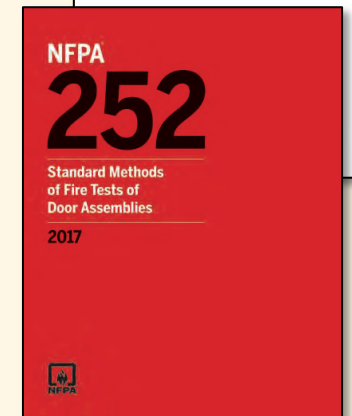
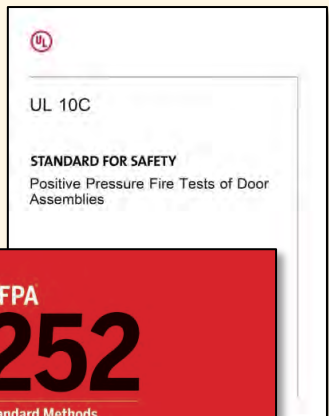
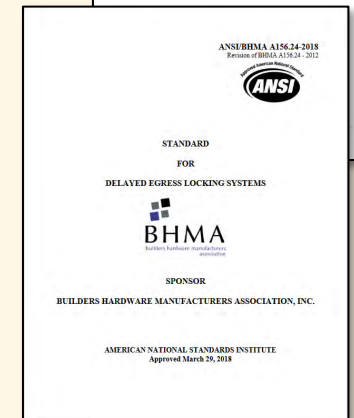
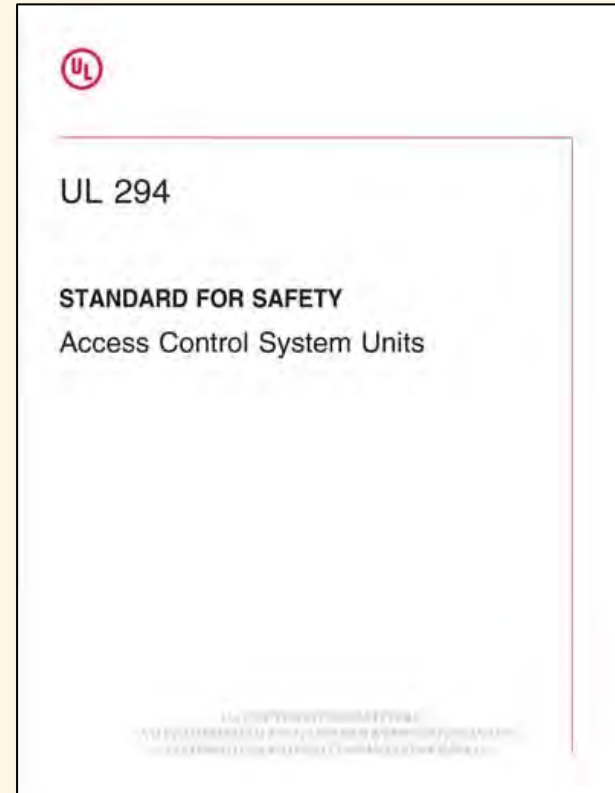
- Lodging or Rooming Houses - limited to one delayed egress device per escape path
- Assembly - permitted except on main entrance/exit doors, not allowed on airport jetways
- Residential Board and Care - limited to exterior doors only
- Other occupancies – no restrictions



# DE – Required Listings



- UL 294 – Standard for Access Control System Units
- UL 10C or NFPA 252 - fire door assemblies
- UL 305 / BHMA A156.3 - panic hardware
- Other BHMA standards not referenced by the model codes (ex. A156.24)



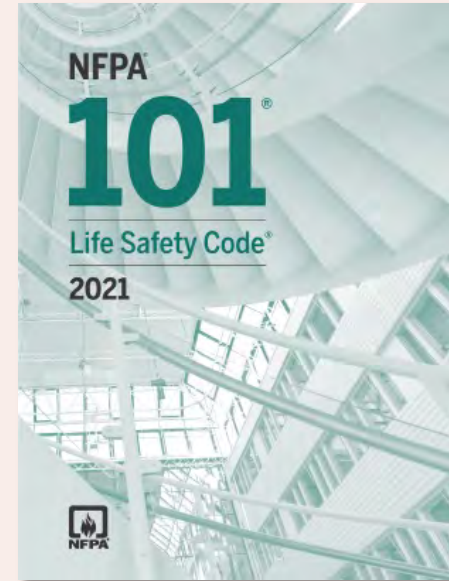
# Code requirements for controlled egress systems





## Controlled Egress Doors in Groups I-1 and I-2

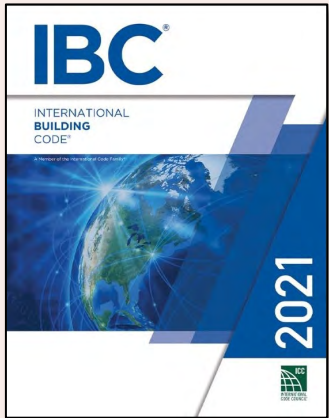
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- 2015 – 1010.1.9.6
- 2012 – 1008.1.9.6
- 2009 – 1008.1.9.6



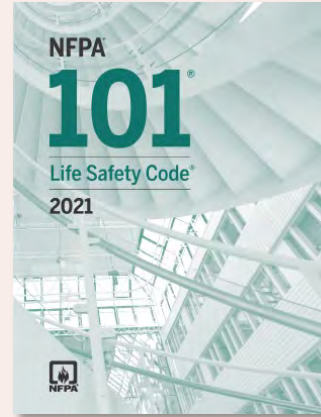
## Door Locking Arrangements

- 18.2.2.2.5 (new)
- 19.2.2.2.5 (existing)
- Also refer to  
Ambulatory Health  
Care Chapters

# CE – Use Groups / Occupancy Classifications



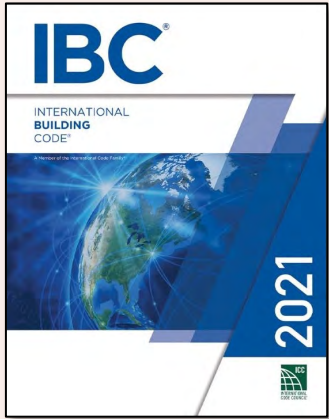
- Use Group I-1 and I-2 - where the clinical needs of persons receiving care require their containment
- Prior to the 2015 edition, this section was limited to Use Group I-2.



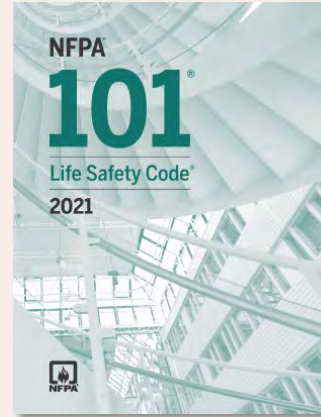
- New and Existing Health Care Occupancies - where patient special needs require specialized protective measures for their safety
- Where specialized security measures are needed – automatic release is not required (staff release only)
- Also refer to 20.1.3.6 (New Ambulatory Health Care) and 21.1.3.6 (Existing Ambulatory Health Care).



# CE – Required Fire Protection Systems



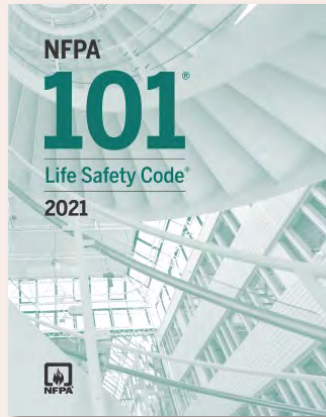
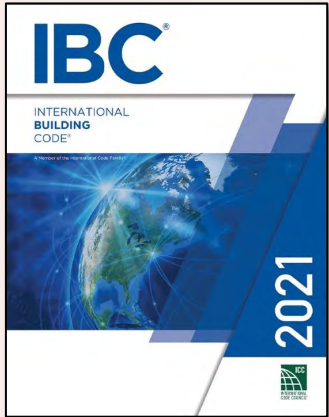
- Equipped throughout with an automatic sprinkler system or approved automatic smoke or heat detection system



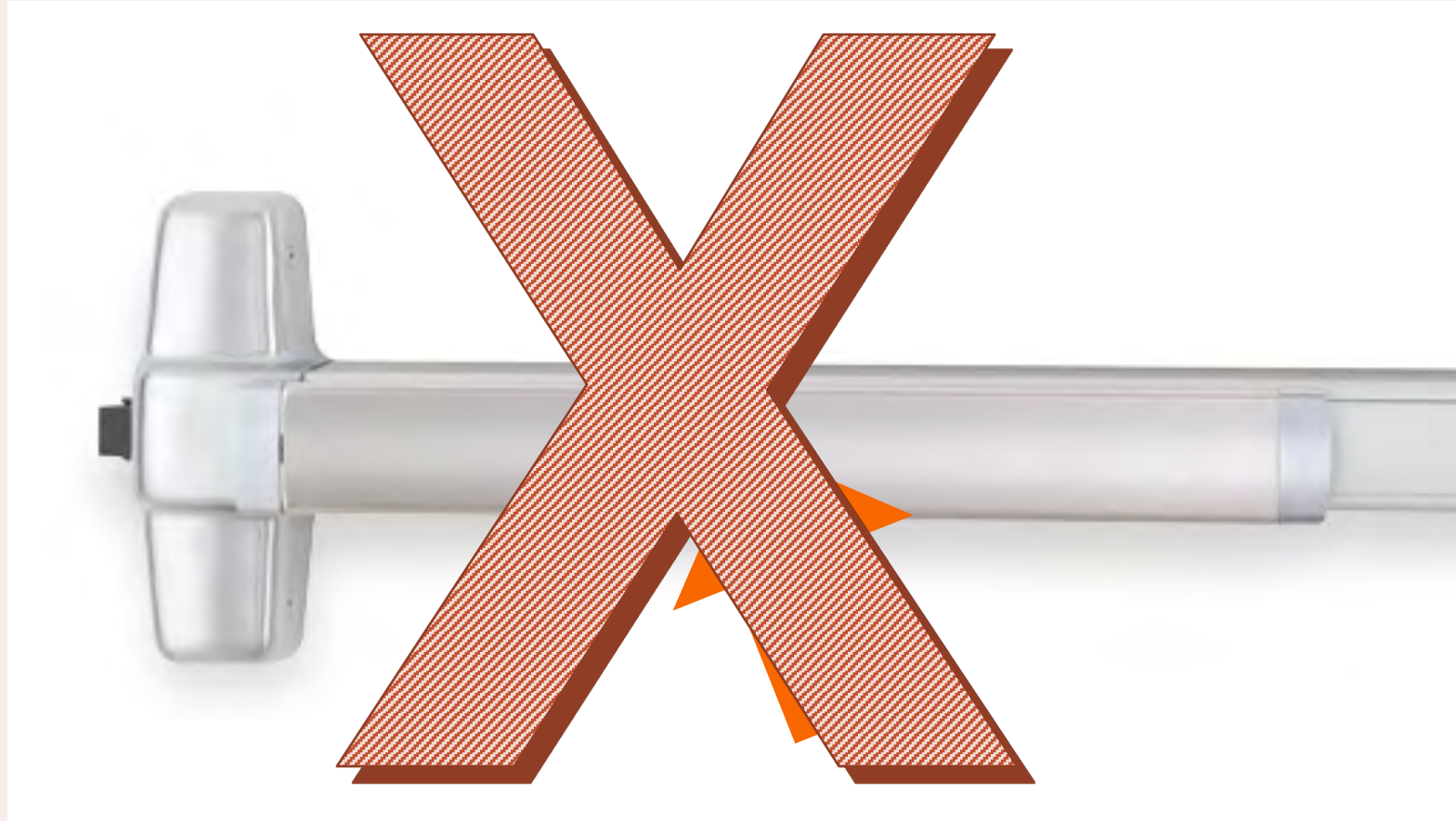
- Protected throughout with a supervised automatic sprinkler system,
- AND 1 of the following:
  - a) complete smoke detection system throughout the locked space, OR
  - b) ability to remotely unlock doors from an approved location within the locked space that is constantly attended.



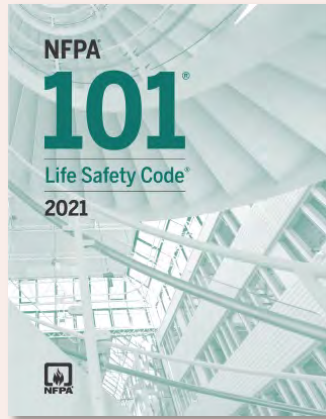
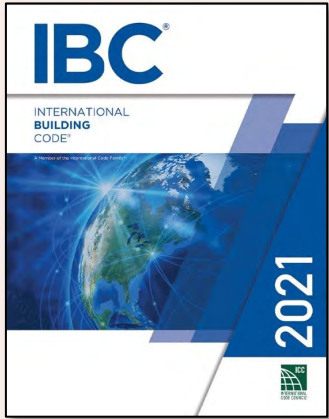
# CE – Actuation Time



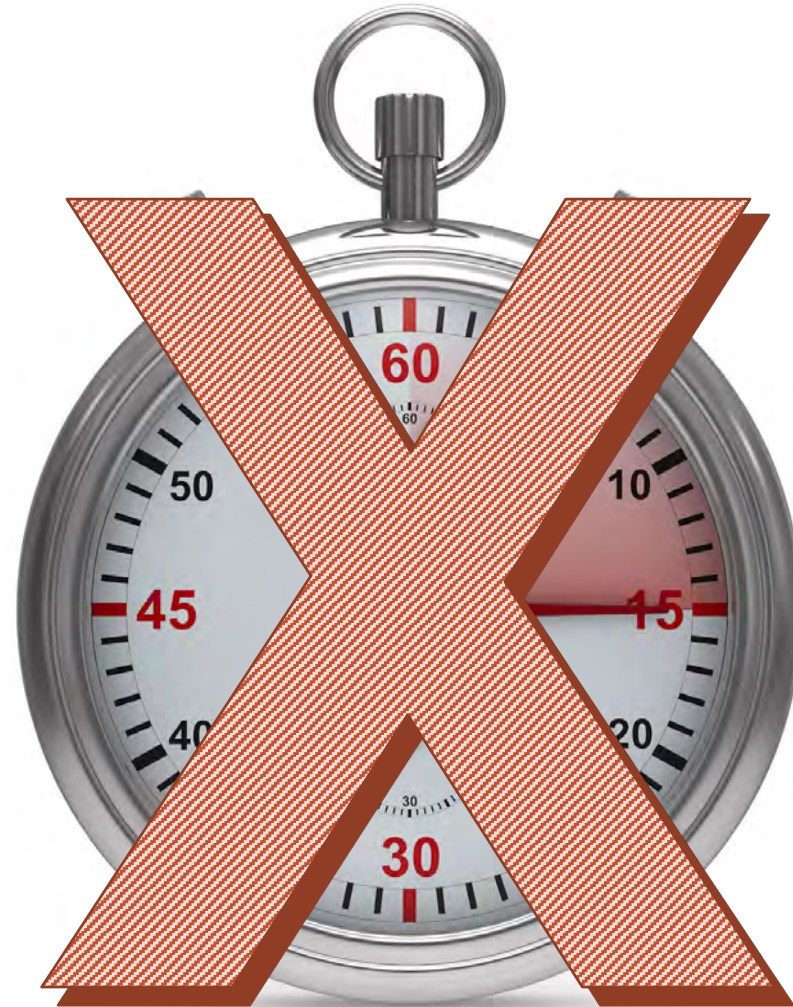
- Release is not required to be actuated by an occupant attempting to operate the door.
- Pushing the touchpad does not initiate a release timer.



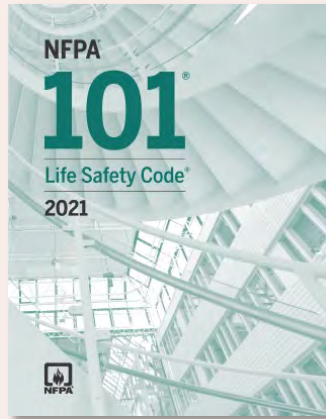
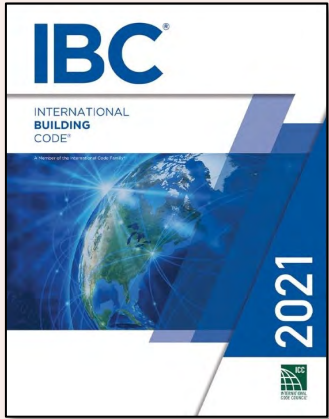
# CE – Automatic Release Delay



- Lock is not required to release automatically after actuating the door hardware.



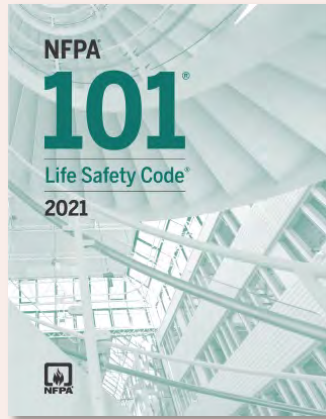
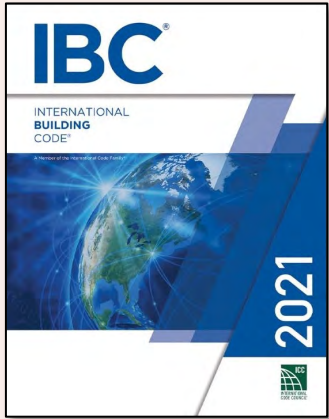
# CE – Rearming After Actuation



- Not specifically addressed in the model codes.



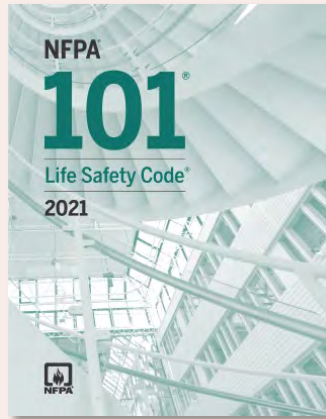
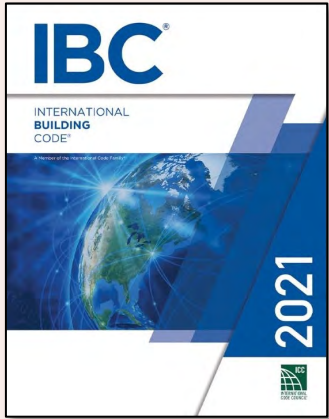
# CE – Audible Alarm



- Audible alarm NOT required.

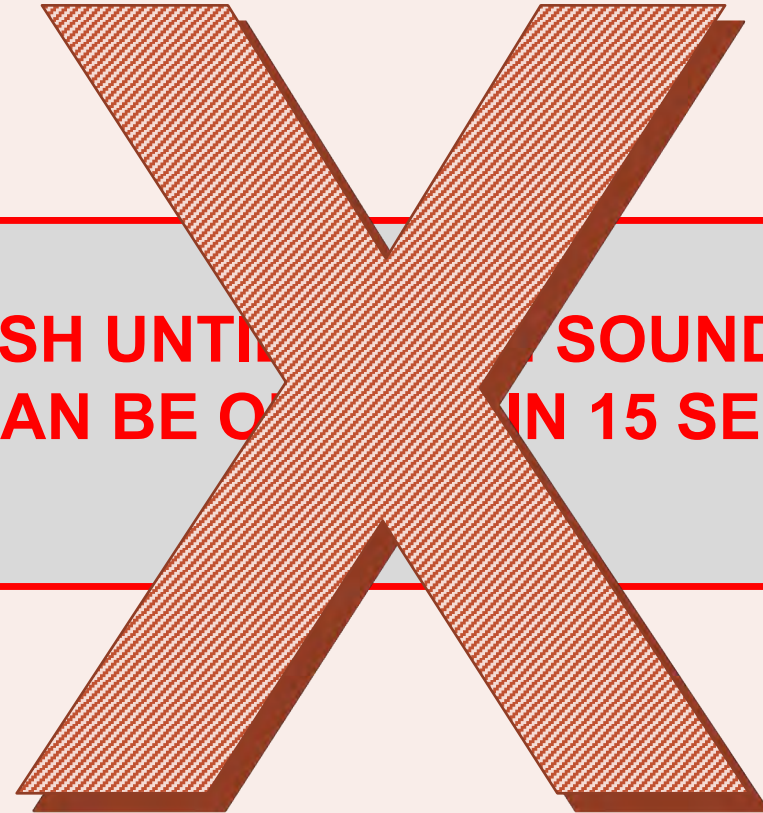


# CE – Signage Requirements

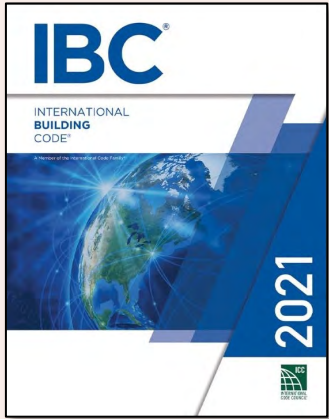


- Signage not required

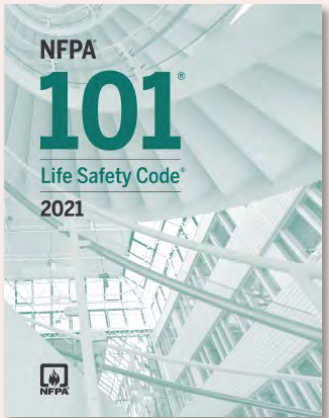
**PUSH UNTIL YOU HEAR SOUNDS.  
DOOR CAN BE OPENED IN 15 SECONDS.**



# CE – Action upon actuation of the fire alarm / sprinkler system



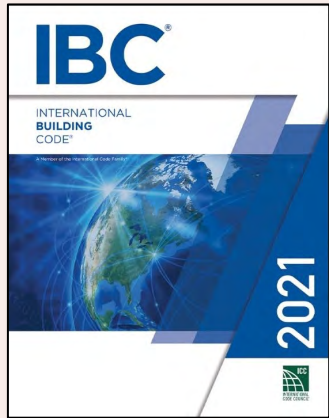
- Unlock for immediate egress
  - not required for psychiatric treatment areas
  - not required when a listed child abduction system is used



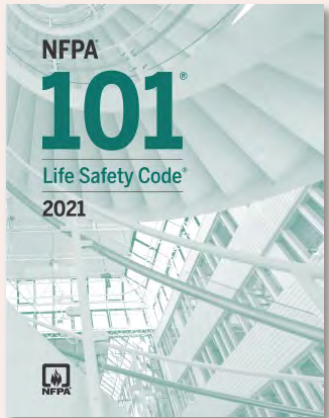
- Unlock for immediate egress upon activation of the smoke detection system, waterflow in the automatic sprinkler system
  - not required where patients require specialized security measures or pose a security threat



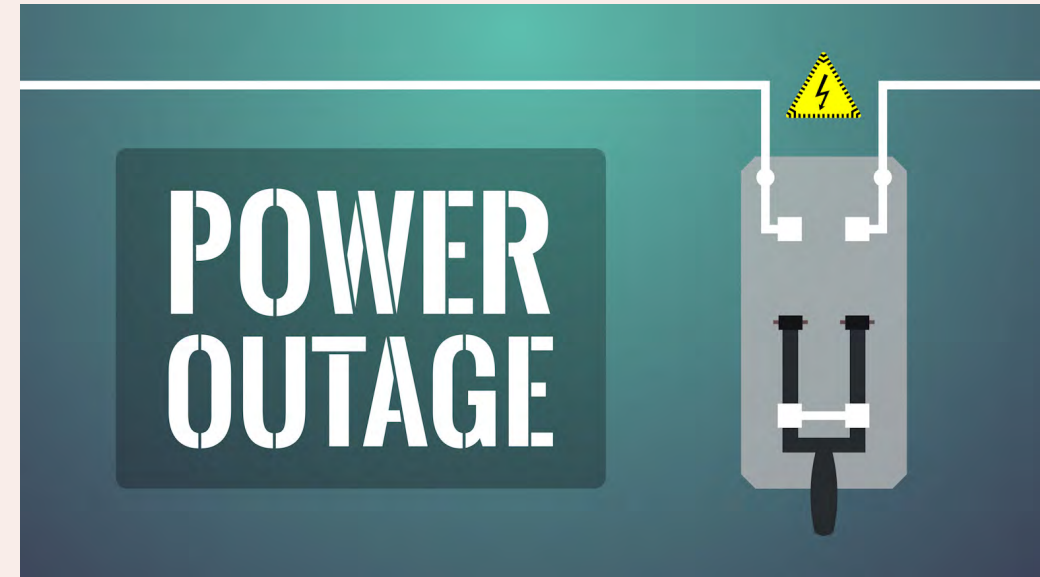
# CE – Action upon power failure



- Unlock for immediate egress
  - not required for psychiatric treatment areas
  - not required when a listed child abduction system is used

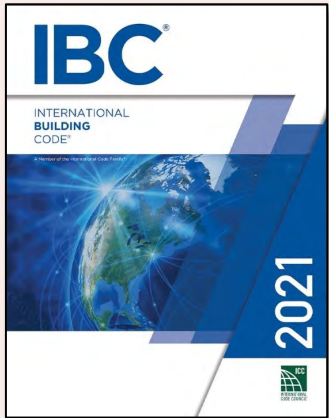


- Unlock for immediate egress
  - not required where patients require specialized security measures or pose a security threat

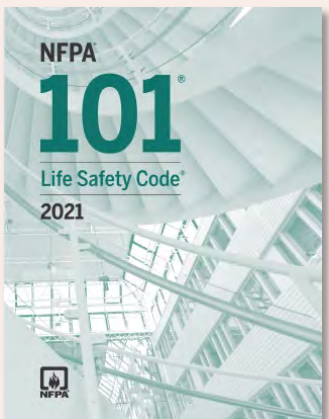




# DE – Remote Release



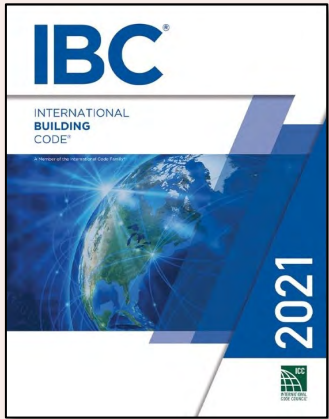
- Switch which directly breaks power to the lock, located at the fire command center, nursing station, or other approved location
  - not required for psychiatric treatment areas
  - not required when a listed child abduction system is used



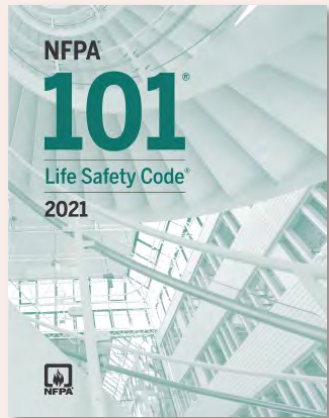
- Remote control of locks is one option for rapid removal of occupants.
- New occupancies - remote control must be from within the locked area



# CE – Staff Release



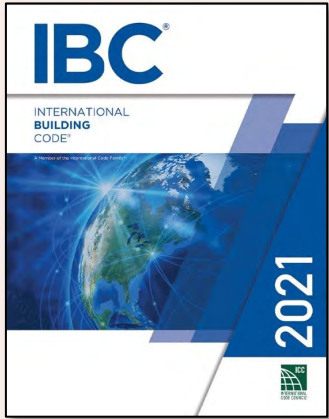
- Procedures for unlocking doors must be part of emergency plan.
- All clinical staff must carry keys, codes, or other credentials to unlock doors.



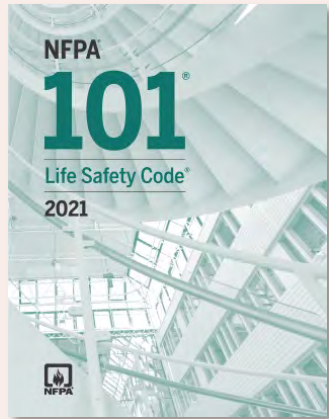
- Staff can readily unlock doors at all times.
- Rapid removal of occupants facilitated by:
  - a) remote control of locks
  - b) keys carried by staff at all times, or
  - c) other reliable means always available to staff



# CE – Emergency Lighting



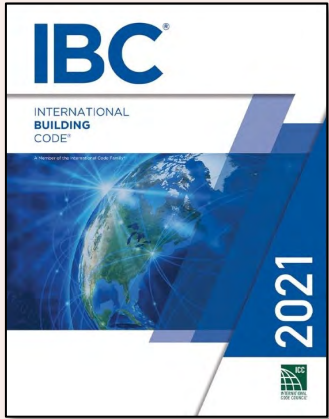
- Required on the egress side of the door



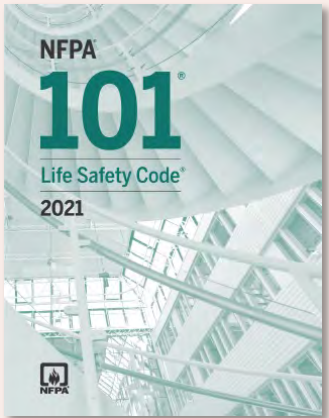
- Emergency lighting is not referenced in this section



# CE – Quantity per egress path



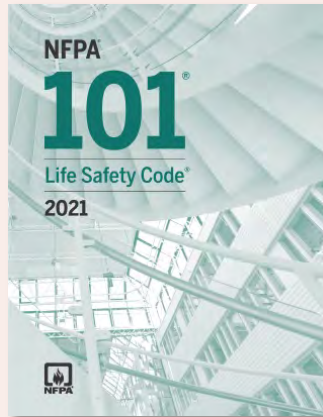
- Occupant must not be required to pass through more than one controlled egress lock before entering an exit
  - not limited for psychiatric treatment areas
  - not limited when a listed child abduction system is used



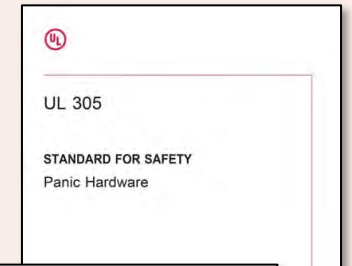
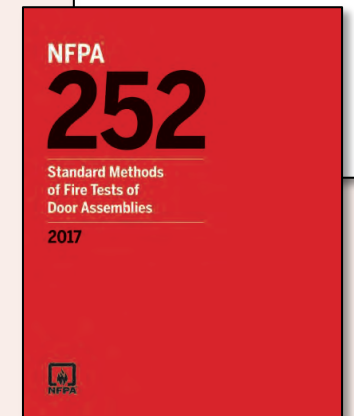
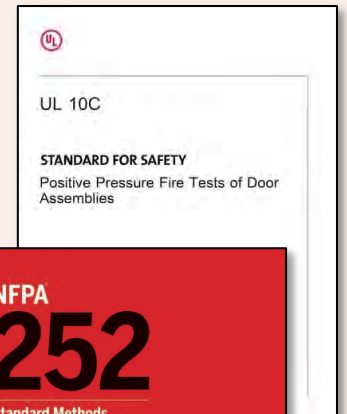
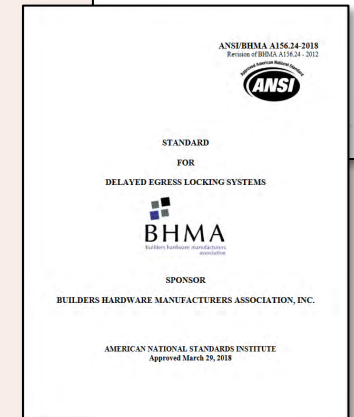
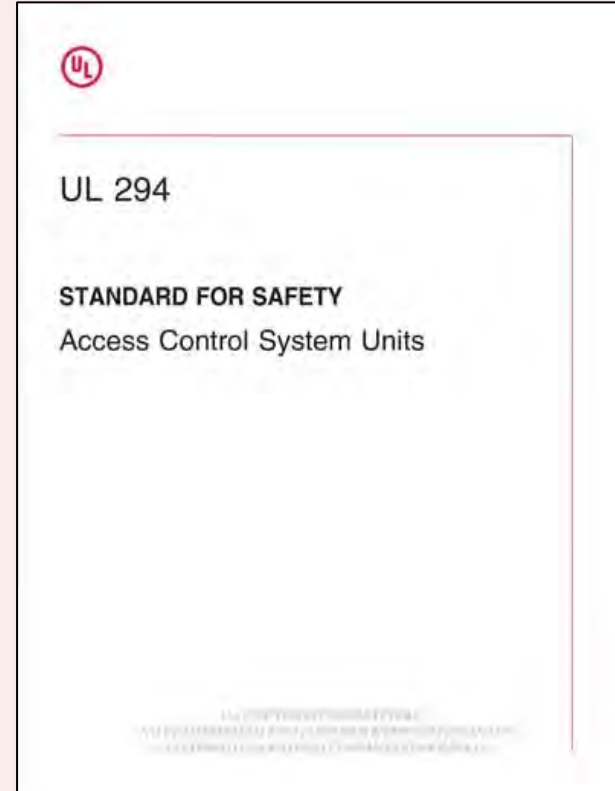
- New Occupancies: 1 locking device per door, maximum
- AHJ may approve more than one lock per door for existing occupancies
- Number of doors with controlled egress locks is not limited by NFPA 101



# CE – Required Listings



- UL 294 – Standard for Access Control System Units
- UL 10C or NFPA 252 - fire door assemblies
- UL 305 / BHMA A156.3 - panic hardware
- Other BHMA standards not referenced by the model codes (ex. A156.24)



# UL 294 – Standard for Safety Access Control System Units

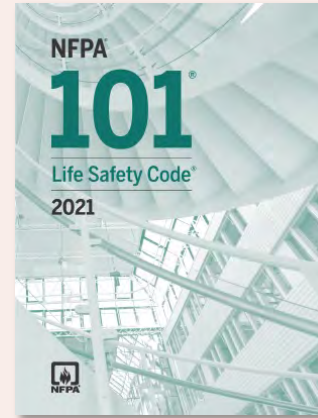
- UL 294 listing is **NOT** required by code for all types of access control systems
- The listing **IS** required by code for:

- |                           |  |
|---------------------------|--|
| • Delayed Egress Locks    | <b>15 Second Delay</b>                         |
| • Controlled Egress Locks | <b>Health Care Only</b>                        |
| • Sensor Release          | <b>Typically<br/>Electromagnetic<br/>Locks</b> |
| • Door-Hardware Release   | <b>Locks</b>                                   |
| • Elevator Lobby Locks    | <b>NFPA 101 Only</b>                           |

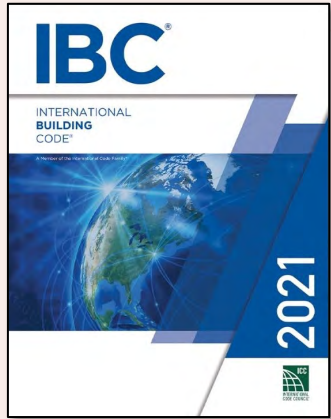


# CE – Murals disguising egress doors

- NFPA 101
  - Murals to disguise egress doors are allowed on the same doors that are allowed to have controlled egress locks
  - Doors readily unlockable by staff at all times
  - Door-releasing hardware readily accessible for staff use
  - Door-releasing hardware must not be covered by mural
  - Mural must not impair door operation
  - Location and operation of these doors must be identified in the fire safety plan and included in staff training
- Murals on egress doors are not addressed by the IBC

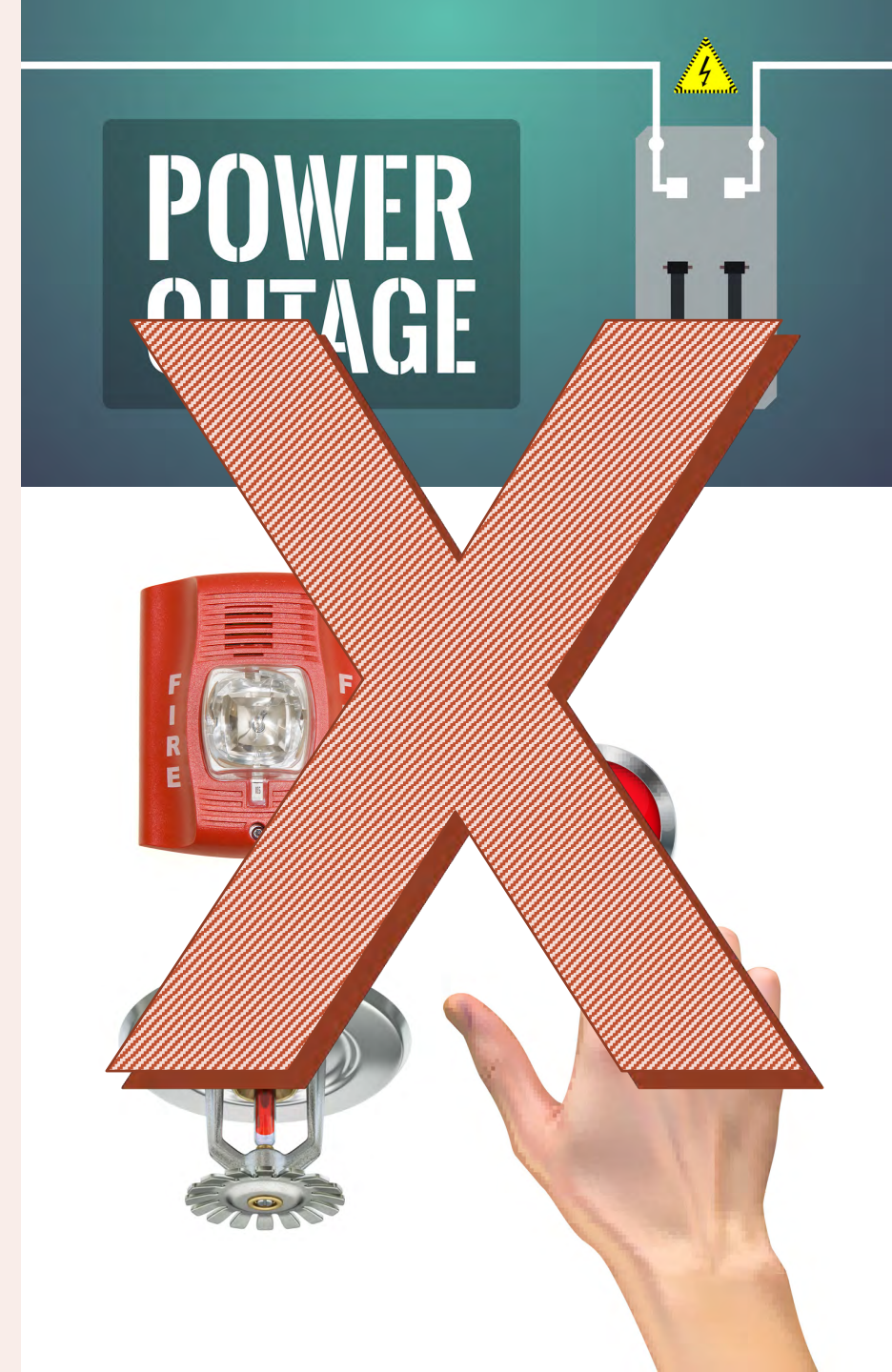


# CE – Psychiatric or cognitive treatment areas & units with listed child abduction systems (IBC)



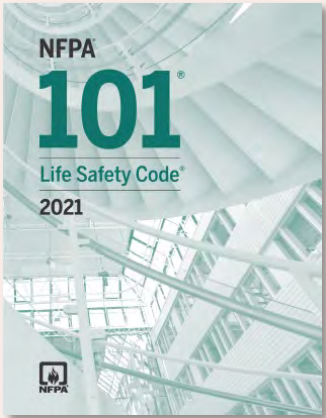
IBC exempts these doors from:

- Automatic release upon fire alarm / sprinkler activation
- Release upon power failure
- Remote release
- Limitation on the number of controlled egress doors before entering exit





# CE – Specialized security measures or security risks (NFPA 101)



- NFPA 101
  - *Door-locking arrangements shall be permitted where the clinical needs of patients require **specialized security measures** or where patients pose a **security threat**, provided that **staff can readily unlock doors at all times** in accordance with 18.2.2.2.6.*
  - *18.2.2.2.6 Doors that are located in the means of egress and are permitted to be locked under other provisions of 18.2.2.2.5 shall comply with both of the following:*
    - (1) Provisions shall be made for the **rapid removal of occupants** by means of one of the following:*
      - (a) **Remote control of locks** from within the locked smoke compartment*
      - (b) **Keying of all locks** to keys carried by staff at all times*
      - (c) **Other such reliable means** available to the staff at all times*
    - (2) Only one locking device shall be permitted on each door.*

# Mechanical Controlled Egress in Health Care

**IBC-2021: Locks and latches.** *Locks and latches shall be permitted to prevent operation of doors where any of the following exist:*

- 2. In Group I-1 Condition 2 and Group I-2 occupancies where the clinical needs of persons receiving care require containment or where persons receiving care pose a security threat, provided that all clinical staff can readily unlock doors at all times, and all such locks are keyed to keys carried by all clinical staff at all times or all clinical staff have the codes or other means necessary to operate the locks at all times.*

Refer to the code for other items in this section.



# Mechanical Controlled Egress in Health Care

## **NFPA 101:**

*18.2.2.2.5.1\* Door-locking arrangements shall be permitted where the clinical needs of patients require specialized security measures or where patients pose a security threat, provided that staff can readily unlock doors at all times in accordance with 18.2.2.2.6.*

*18.2.2.2.6 Doors that are located in the means of egress and are permitted to be locked under other provisions of 18.2.2.2.5 shall comply with both of the following:*

- (1) Provisions shall be made for the rapid removal of occupants by means of one of the following:
  - (a) Remote control of locks from within the locked smoke compartment*
  - (b) Keying of all locks to keys carried by staff at all times*
  - (c) Other such reliable means available to the staff at all times**
- (2) Only one locking device shall be permitted on each door.*



# Questions

- Which health care units does this apply to? Behavioral health? Memory care? Others?
- Which doors can have mechanical locks? Patient rooms? Stair doors? Exterior exits?
- Can these locks be installed in addition to other latching hardware? Panic hardware?
- How long will it take staff to unlock all of the doors required for egress?
- Under what circumstances would a facility have to use electrified controlled egress locks rather than mechanical locks?



# Conclusion

- Where is each type of lock most effective?
- Which occupancy types allow these locks?
- What are the code requirements for each?
- Is mechanical locking a viable option for health care?
- Watch out for state/local code modifications.





**Thank You!**

This concludes the American Institute of Architects  
Continuing Education Systems Program

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