



## Electrical Locking System Guideline

This document is intended as guidance for the electronic locking egress requirements of the City of Austin Fire Marshals Office. Beginning September 2024, building permits are required to identify one of the following egress Types for all electrically locked doors:

*(Items marked with an \* indicate 2024 IFC requirements/sections)*

### Electrically Locked Egress Types:

Type A - Door Hardware Release (Group H prohibited)

Type B - Sensor Release (Group H prohibited)

Type C - Delayed Egress (Auto-sprinkler, smoke or heat detection required)

Type D - Controlled Egress in Group I-2 & I-2

Type E - Locking arrangements in correctional facilities

Type F - Stairwell exit access doors

\*Type G - Elevator Lobby exit access doors (Takes affect with 2024 adoption)

- Plans will note one of the above egress types and provide a sequence of operation for all doors with electrical locking. A sequence of operation is required on the plan set which will describe the following door information and egress functions.

### Sequence of Operation:

1 - Door identifier: 100, 101, 102, etc...

2 - Electrical Lock Type: A - Door Hardware, B - Sensor Release, C - Delayed, Controlled, etc... (see EL Types above)

3 - Function on Alarm Activation: Not applicable, Fail-secure (locked), or Fail-safe (unlocked)

4 - Function on Sprinkler Activation: Not applicable, Fail-secure, or Fail-safe

5 - Function on Power Loss: Fail-secure or Fail-safe

6 - Electrical Lock Override: Not applicable, Fire Command center, or Knox Box

- The Fire Review and Inspection will verify the following code criteria for each electrically locked egress type.

### A) Door Hardware release. (Group H prohibited)

See 2021 IBC 1010.2.11, \*2024 IBC 1010.2.10

- Hardware affixed to the door leaf
- Operational with one hand
- Directly interrupts power/unlocks immediately
- Loss of power unlocks.
- Panic hardware releases electric lock
- Locking device listed for UL 294 or 1034



**B) Sensor release. (Group H prohibited)**

See 2021 IBC 1010.2.12, \*2024 IBC 1010.2.11

1. Installed on egress side, unlocks on occupant approaching
2. Signal from sensor or loss of power unlocks
3. Loss of power from lock or system, unlocks
4. Push to exit button
5. FA activation unlocks until reset
6. AS activation unlocks until reset
7. Emergency lighting on egress side
8. Locking device listed for UL 294 or 1034

**C) Delayed Egress. (Auto-sprinkler, smoke or heat detection required)**

See 2021 IBC 1010.2.13, \*2024 IBC 1010.2.12

1. Groups B, F, I, M, R, S, & U occupancies
2. Group E classrooms with occupant load less than 50
3. Courtrooms group A-3 and B, exit access doors other than main exit

See 2021 IBC 1010.2.13.1, \*2024 IBC 1010.2.12.1

1. Delay shall deactivate on sprinkler and fire detection
2. Delay shall deactivate on loss of power
3. Delay can be deactivated at Fire Command Center
4. Attempt to egress begins irreversible process to allow egress in 15 seconds
5. Egress path limited to 1 delayed egress
6. Signage
7. Emergency lighting
8. Listed for UL 294 or 1034

**D) Controlled Egress in Group I-1 & I-2**

See 2021 IBC 1010.2.14, \*2024 IBC 1010.2.13

1. Unlocks for sprinkler or smoke detection
2. Unlocks on power loss
3. Unlocks from fire command center
4. Path of egress limited to one controlled egress door
5. Approved Emergency Preparedness and Planning required
6. All clinical staff shall have the keys or codes
7. Emergency lighting
8. Listed for UL 294 or 1034



**E) Locking arrangements in correctional facilities**

See 2021/\*2024 IBC 1010.2.15

1. Unlocks by one of the following: AS activation, approved manual FA box, or a constantly attended location.

**F) Mid-Rise, Stairwell exit access doors (Total height below 70' from FD access)**

See local amendment to 2021 IBC 1010.2.7, \*2024 IBC 1010.2.6

1. Unlocks from the stairwells level of exit discharge.

**High-rise, Stairwell doors (Total height above 70')**

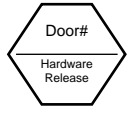
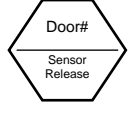
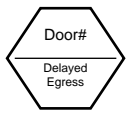
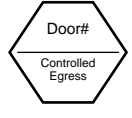

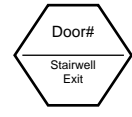
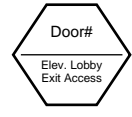
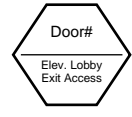
1. Unlocks at Fire Command Center

**G) \*Elevator Lobby exit access doors (Takes affect with 2024 adoption)**

See 2024 IBC 1010.2.14

1. Exit travel with two exits does not require travel through elevator lobby
2. AS & FA Systems required
3. FA unlocks until reset
4. Unlocks on loss of power
5. Unlocks at Fire Command Center
6. Two-way com. with constantly attended monitoring capable or remotely unlocking.
7. Emergency lighting on both side of door. 8. Listed for UL 294 or 1034.g device listed for UL 294 or 1034

# Electrical Locking System Fire Review Matrix

Elec. Locking Type Inspection Criteria	Example Sequence of Operation	Example Door Note
<p><b>Type A Door Hardware release.</b> (Group H prohibited) See 2021 IBC 1010.2.11, *2024 IBC 1010.2.10</p> <ol style="list-style-type: none"> <li>1. Hardware affixed to the door leaf.</li> <li>2. Operational with one hand.</li> <li>3. Directly interrupts power/unlocks immediately.</li> <li>4. Loss of power unlocks.</li> <li>5. Panic hardware releases electric lock.</li> <li>6. Locking device listed for UL 294 or 1034.</li> </ol>	<p><b>Sequence of Operation Hardware Release Egress</b> Doors 101, 102 etc... Door will unlock on power loss. Door (locks or unlocks) on fire alarm and fire sprinkler activation. Door will have free egress at all time.</p>	<p>A </p>
<p><b>Type B Sensor release.</b> (Group H prohibited) See 2021 IBC 1010.2.12, *2024 IBC 1010.2.11</p> <ol style="list-style-type: none"> <li>1. Installed on egress side, unlocks on occupant approaching.</li> <li>2. Signal from sensor or loss of power unlocks.</li> <li>3. Loss of power from lock or system, unlocks.</li> <li>4. Push to exit button.</li> <li>5. FA activation unlocks until reset.</li> <li>6. AS activation unlocks until reset.</li> <li>7. Emergency lighting on egress side.</li> <li>8. Locking device listed for UL 294 or 1034.</li> </ol>	<p><b>Sequence of Operation Sensor Release Egress</b> Doors 101, 102 etc... Door will unlock on power loss. Door unlocks on fire alarm activation and fire sprinkler activation. Door will have free egress at all times.</p>	<p>B </p>
<p><b>Type C Delayed Egress.</b> (Auto-sprinkler, smoke or heat detection required) See 2021 IBC 1010.2.13, *2024 IBC 1010.2.12</p> <ol style="list-style-type: none"> <li>1. Groups B, F, I, M, R, S, &amp; U occupancies.</li> <li>2. Group E classrooms with occupant load less than 50.</li> <li>3. Courtrooms group A-3 and B, exit access doors other than main exit.</li> </ol> <p>See 2021 IBC 1010.2.13.1, *2024 IBC 1010.2.12.1</p> <ol style="list-style-type: none"> <li>1. Delay shall deactivate on sprinkler and fire detection.</li> <li>2. Delay shall deactivate on loss of power.</li> <li>3. Delay can be deactivated at Fire Command Center.</li> <li>4. Attempt to egress begins irreversible process to allow egress in 15 sec.</li> <li>5. Egress path limited to 1 delayed egress.</li> <li>6. Signage. 7. Emergency lighting. 8. Listed for UL 294 or 1034.</li> </ol>	<p><b>Sequence of Operation Delayed Egress</b> Doors 101, 102 etc... Delay will deactivate on power loss, fire alarm and fire sprinkler activation. Delay can deactivate from the Fire Command Center. Door will (lock or unlock) on power loss Door will (lock or unlock) on fire alarm and fire sprinkler activation</p>	<p>C </p>
<p><b>Type D Controlled Egress in Group I-2 &amp; I-3.</b> See 2021 IBC 1010.2.14, *2024 IBC 1010.2.13</p> <ol style="list-style-type: none"> <li>1. Unlocks for sprinkler or smoke detection.</li> <li>2. Unlocks on power loss.</li> <li>3. Unlocks from fire command center.</li> <li>4. Path of egress limited to one controlled egress door.</li> <li>5. Approved Emergency Preparedness and Planning required.</li> <li>6. All clinical staff shall have the keys or codes.</li> <li>7. Emergency lighting.</li> <li>8. Listed for UL 294 or 1034.</li> </ol>	<p><b>Sequence of Operation Controlled Egress, Group I-1 &amp; I-2</b> Doors 101, 102 etc... Doors unlocks on power loss. Door unlocks on fire alarm activation and fire sprinkler activation.. Door will have free egress at all times</p>	<p>D </p>
<p><b>Type E Locking arrangements in correctional facilities.</b> See 2021/2024 IBC 1010.2.15 Unlocks by one of the following: AS activation, approved manual FA box, or a constantly attended location.</p>	<p><b>Sequence of Operation Locking in Correctional Facilities</b> Doors 101, 102 etc... Door will (lock or unlock) on power loss. Door unlocks on (fire sprinkler activation, manual FA box, or from a constantly attended location).</p>	<p>E </p>
<p><b>Type F Mid-Rise, Stairwell exit access doors.</b> (Bldg. height below 70' from FD access) See local amendment to 2021 IBC 1010.2.7, *2024 IBC 1010.2.6</p> <p><b>High-rise, Stairwell exit access doors.</b> (Bldg. height above 70')</p> <ol style="list-style-type: none"> <li>1. Unlocks at Fire Command Center.</li> </ol>	<p><b>Sequence of Operation Mid-Rise Building, Stairway Door</b> Doors 101, 102 etc... Door unlocks at exit discharge override. Door will (lock or unlock) on power loss. Door will (lock or unlock) on fire alarm activation and fire sprinkler activation. Doors have free egress at all times.</p>	<p>F </p>
<p><b>Type G Elevator Lobby exit access doors.</b> See *2024 IBC 1010.2.14</p> <ol style="list-style-type: none"> <li>1. Exit travel with two exits does not require travel through elevator lobby.</li> <li>2. AS, FA, and Elev. Lobby smoke detection systems required.</li> <li>3. Fire Alarm unlocks until reset.</li> <li>4. Unlocks on loss of power.</li> <li>5. Unlocks at Fire Command Center.</li> <li>6. Two-way com. with constantly attended monitoring capable or remotely unlocking.</li> <li>7. Emergency lighting on both side of door. 8. Listed for UL 294 or 1034.</li> </ol>	<p><b>Sequence of Operation High-Rise Building, Stairway Door</b> Doors 101, 102 etc... Doors unlock at FACP override. Door will (lock or unlock) on power loss. Door will (lock or unlock) on fire alarm activation and fire sprinkler activation. Doors have free egress at all times.</p>	<p>G </p>
<p><b>Sequence of Operation *Elevator Lobby Exit Access Doors</b> Doors 101, 102 etc... Door unlocks on power loss. Door unlocks on fire alarm activation. Door will (lock or unlock) on fire sprinkler activation. Door can unlock from the Fire Command Center. Door will have free egress at all times.</p>	<p>G </p>	

## Electrical Locking System Submittal Examples

- When a Door Schedule is provided, the electrical locking groups should be designated with-in the schedule.

DOOR SCHEDULE										
DOOR			FRAME				HDWR SET	LOCATION	ELECTRICAL LOCKING TYPE	
NO.	SIZE			MAT'L	TYPE	H				J
	WIDTH	HEIGHT	THK							
101	3'	7'	1.75"	ALUM	G	6		1	EXTERIOR TO VESTIBULE	A
102	3'	7'	1.75"	ALUM	F	6		1	VESTIBLE TO LOBBY	B
103	3'	7'	1.75"	HM	F	6		7	1ST FLOOR ELEV. LOBBY	E
104	3'	7'	1.75"	ALUM	FG	6		5	EAST CORRIDOR	N/A
105	3'	7'	1.75"	ALUM	G	6		10	WEST CORRIDOR	A

- If a full door schedule is not available, please create door tags or key notes that make clear to the reviewer the Electrical Locking Type for each door with electrical locking.

Address:

Electrical Lock Type: B  
 Occupant Load: 500  
 Square Footage: 5000  
 Number of Stories: 5  
 Bldg. Fire Sprinklered: Yes  
 Bldg. Fire Alarmed: Yes

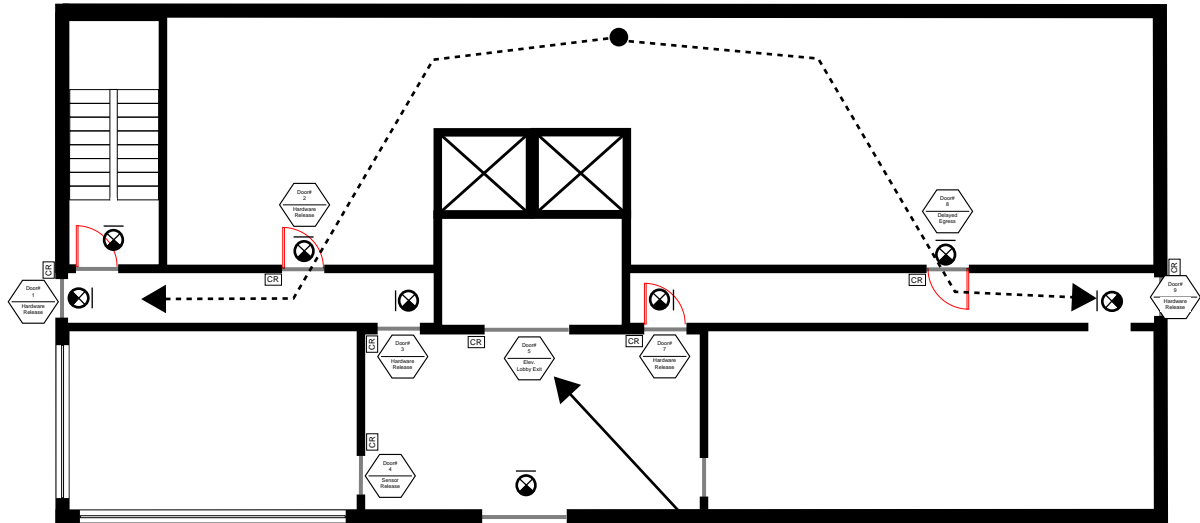
Scope of Work: Instillation of a New Electronic Locking System.

**Sequence of Operation**  
**Doors 1, 2, 3, 7, & 9**  
**Hardware Release Egress**  
 Doors 101 & 101A  
 Doors unlock on valid card read  
 Doors unlock on power loss  
 Doors lock on fire alarm activation  
 Doors lock on fire sprinkler activation  
 Doors will free egress at all time

**Sequence of Operation**  
**Door 8**  
**Delayed Egress**  
 Doors 101 & 101A  
 Doors unlock on valid card read  
 Doors ingress locked on power loss  
 Doors lock on fire alarm activation  
 Doors lock on fire sprinkler activation  
 Doors ingress locked on power loss

**Sequence of Operation**  
**Sensor Release Egress**  
 Doors 101 & 101A  
 Doors unlocks on a valid card read  
 Doors unlocks on power loss  
 Doors lock on fire alarm activation  
 Doors lock on fire sprinkler activation  
 Doors have free egress at all times

(Example Electrical Locking Plan, NTS)



Symbols Legend		
SYMBOL	DESCRIPTION	UL#
CR	Card Reader	294 or 1034
KB	Knox Box	N/A