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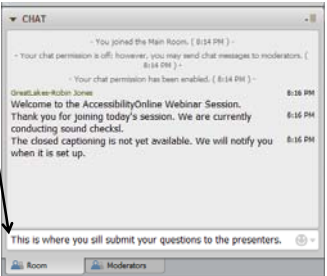
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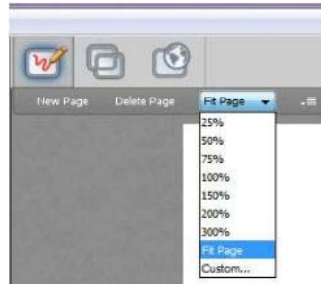
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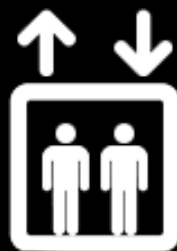
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# Accessible Elevators and Platform Lifts



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# Presenters



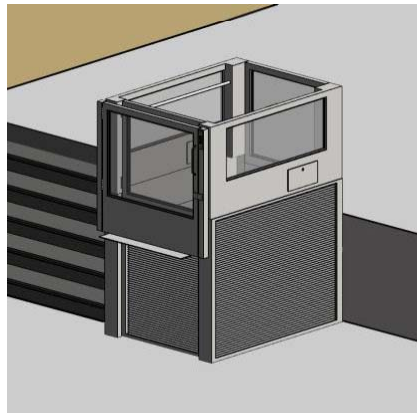
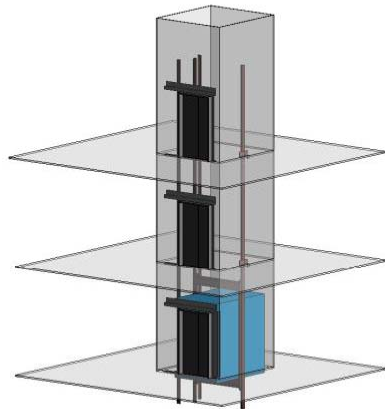
**Jim Pecht**  
U.S. Access Board



**Brian Black**  
Code and Safety  
Consultant to *NEII*®

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# Elevators and Platform Lifts



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## **Session Agenda**

- **Where Vertical Access is required**
- **Technical Provisions**
- **Who Is the American Society of Mechanical Engineers (ASME)**
- **Elevator Myths and Facts**
- **ASME A17.1 and A18**
- **What is in the Future?**

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## **Where Vertical Access Is Required**

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## **Where Required (§206.2.3 & §F206.2.3)**

- **New construction - vertical access between floors is required in most multi-story facilities (some exceptions)**
- **Passenger elevators provide vertical access between stories and to mezzanines**

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## **Where Required (§206.6 & §F206.6)**

- **Each passenger elevator provided (whether required or not) must comply with the standards**
- **Limited-use/ limited- application elevator or LULA permitted in facilities not required to have an accessible route between stories or to mezzanines**
- **LULAs can also be used as an alternative to permitted platform lifts and private residence elevators**

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## Vertical Access Exception

- Applies to private buildings or facilities that are less than three stories or that have less than 3000 square feet per story unless the building or facility is -
  - a shopping center
  - a shopping mall
  - the professional office of a health care provider
  - a terminal, depot or other station used for specified public transportation
  - an airport passenger terminal
  - another type of facility as determined by the Attorney General

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## Vertical Access Exception

- Applies only to privately owned commercial facilities and places of public accommodation under Title III of the ADA (28 CFR, Part 36.)
  - Cannot be used by Federal, State, or local government facilities (vertical access required in facilities of two or more stories)
- Exception for vertical access to two story Federal, State, or local government facilities where -
  - One story has occupant load of five or fewer persons
  - No public use space

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## **Platform Lifts (§206.7 & §F206.7)**

Use in new construction limited to:

- Performance areas
- Incidental small non-public spaces
- Judicial spaces such as jury boxes and witness stands
- Where existing site constraints make them the only option
- Guest room and residential dwelling units
- Amusement Rides
- Play areas
- Team player seating
- Recreational boating facilities and fishing piers and platforms

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## **Platform Lifts (§206.7 & §F206.7)**

- Permitted as a component of an accessible route in an existing building or facility

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## Elevators Type

**Facility or Space**

**Elevator Type Permitted**

**Facilities required to provide an accessible route to stories/ mezzanines**

- standard (§407)

**Facilities not required to provide an accessible route to stories/mezzanines**

- standard (§407) or LULA (§408)

**Residential Dwelling Units**

- standard (§407), LULA (§408), or private residence (§409)

**Spaces that can be served by a platform lift**

- standard (§407) or LULA (§408)

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# Technical Provisions

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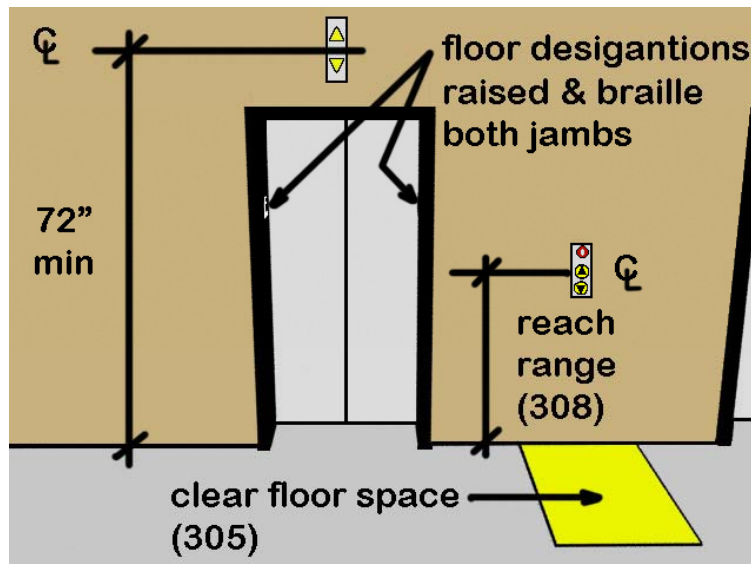
## Reference Standards

§407.1, §408.1, and §409.1 of the Standards require compliance with the ASME A171.1 - 1999 or 2000 Edition of the Safety Code for Elevators and Escalators.

§410.1 of the Standards require compliance with the ASME A18.1 – 2003 Edition of the Safety Standard for Platform Lifts and Stairway Lifts.

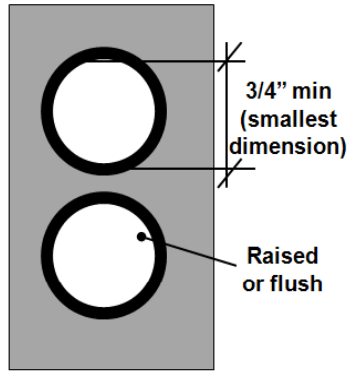
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## Elevator Landing Requirements (§407.2)



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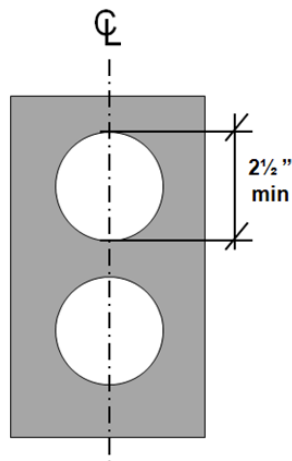
## Call Controls (§407.2.1)



- Compliant as operable part
- Up button above down button
- Visual indication of call registered and call answered
- Raised from, or flush with, faceplate or, if provided, trim ring or ferrule

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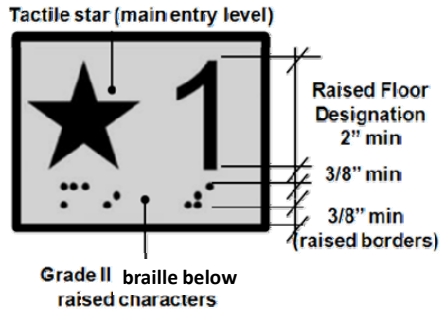
## Hall Signals (§407.2.2)



- Required at each hoistway (including elevators with only 2 stops)
- Indicate car arrival and travel direction
- Visible indicators can be vertical or side-by-side
- Visible from area of hall call button, including those in cars
- Audible signals: one (up)/ two (down) or annunciator
- Frequency: 1500 Hz max. (300 – 3,000 Hz verbal annunciator)
- Signal level: 10dB min. above ambient, 80 dB max.

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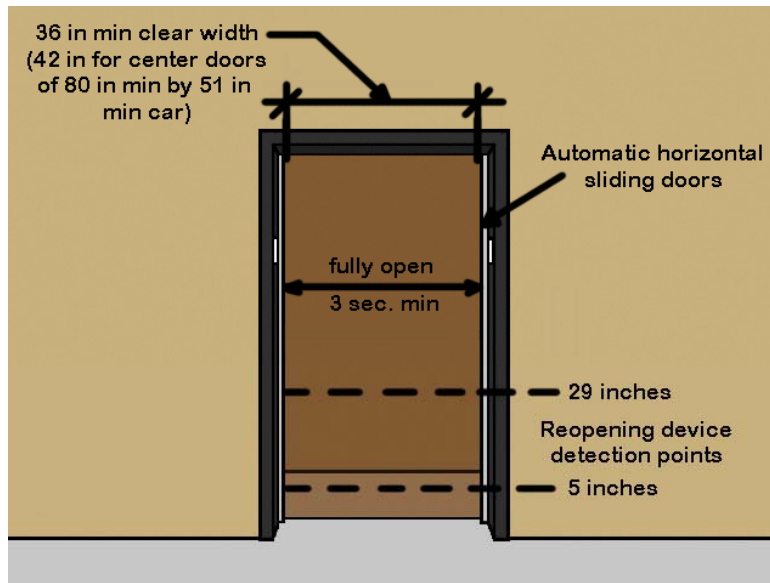
## Hoistway Signs (§407.2.3)



- Both jambs, 48" – 60" AFF (measured to raised character baseline)
- San serif characters raised 1/32" min.
- Compliant character proportion and stroke thickness

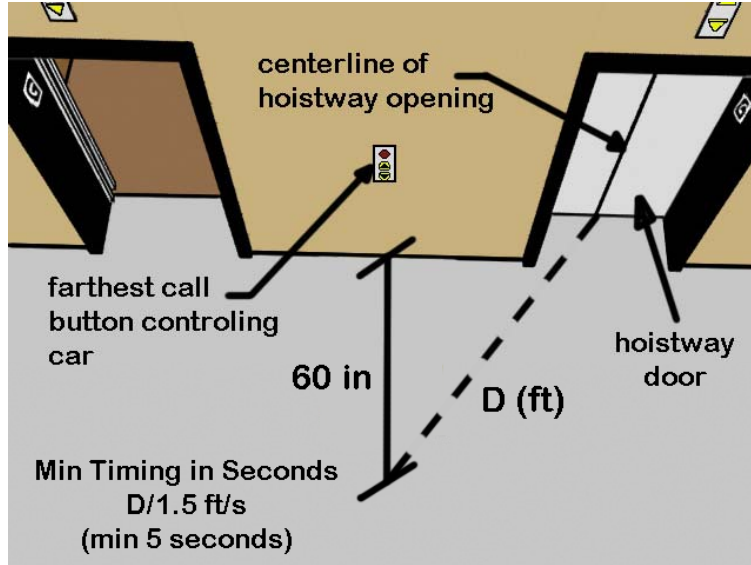
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## Elevator Door Requirements (§407.3)



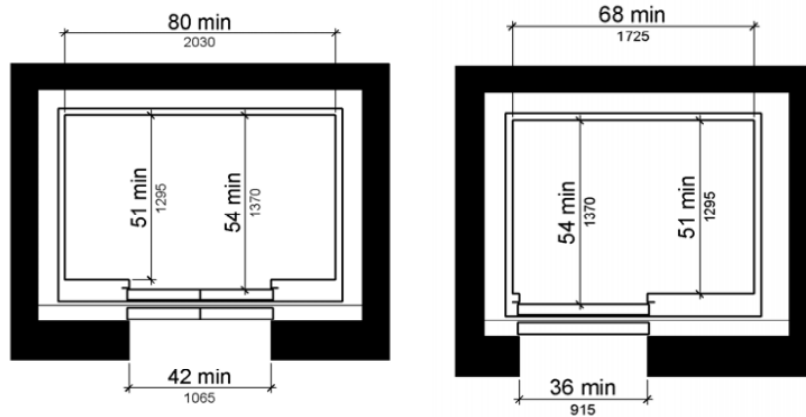
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## Door Timing (§407.3.4)



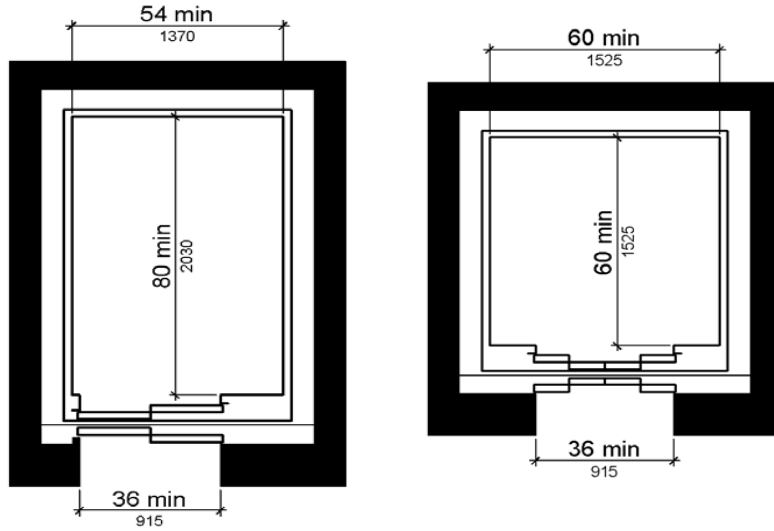
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## Minimum Car Dimensions (§407.4.1)



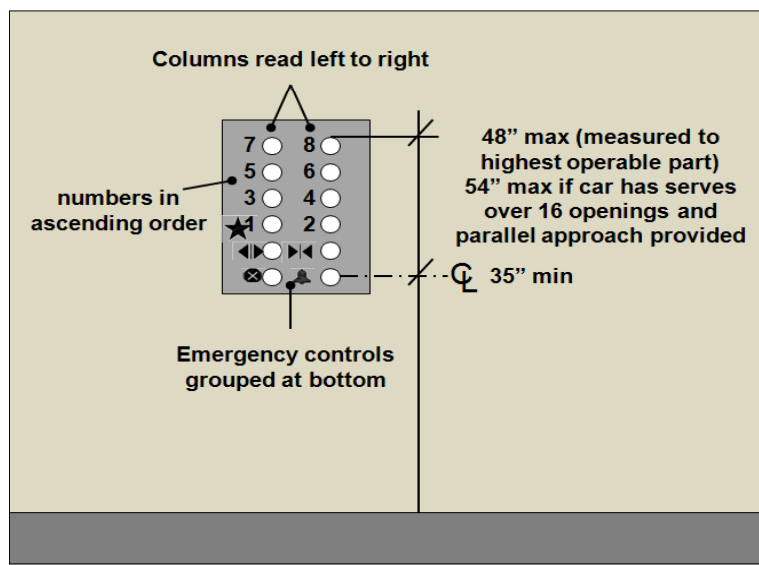
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## Other Car Configurations



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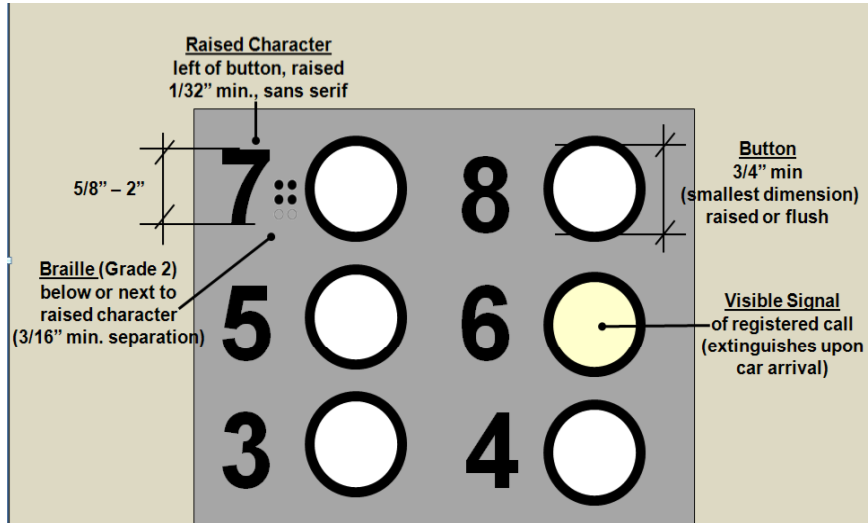
## Elevator Car Controls (§407.4.6 and §407.4.7)



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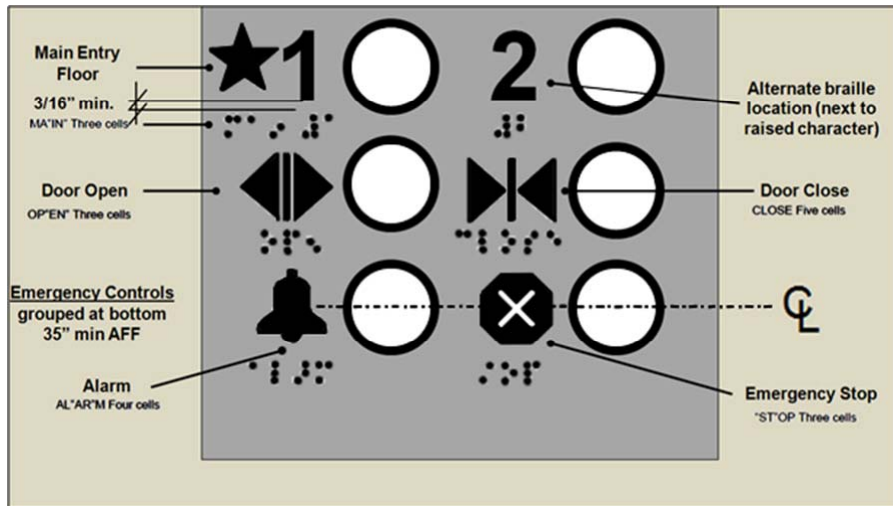


# Control Panel (§407.4.7)



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# Control Panel (§407.4.7)



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## **Alterations to Existing Elevators**

- Existing elevators that are altered must comply
- Standards apply to those “elements” that are altered
- If alterations are made to an existing car, they must also be made to each elevator programmed to respond to the same hall call

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## **Limited-Use/ Limited Application Elevators (§408)**

- Permitted in facilities where an accessible route between stories or mezzanines is not required OR as an alternative to private residence elevators and platform lifts
- Cannot be used as a substitute for a standard elevator

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## **Limited-Use/ Limited Application Elevators (§408)**

- **LULAs must comply with the requirements for standard elevators and applicable sections of the ASME safety code**
- **Smaller car sizes and alternative types of doors**
- **Doors must be positioned on the narrow wall of the LULA car**
- **Less complex than §407 elevators but more sophisticated than §410 platform lifts**

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## **Private Residence Elevators (§409)**

- **Permitted only within residential dwelling units**
- **Elevators located outside dwelling units in residential facilities must comply as standard elevators (§407).**
- **Similar to enclosed platform lift but have more specific door and control requirements, and must provide emergency communication features**

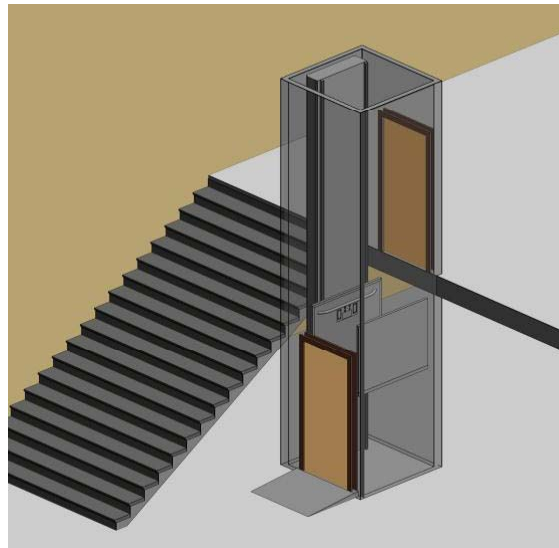
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## Platform Lifts (§410)

- Can be vertical or inclined (utilizing stairways)
- Exposed or enclosed in a shaft similar to private residential elevators
- Must have a platform of a minimum of 30 by 48 inches to accommodate wheeled mobility aids
- Lifts that utilize a chair instead of a platform are not permitted

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## Platform Lifts (§410)



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## **Vertical Platform Lifts (§410)**

- **12' max. travel distance**
- **18 sq. ft. max. platform floor area**
- **Solid enclosure from lowest landing to 42" min. above uppermost landing**
- **Area under platform fully enclosed**

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## **Inclined Platform Lifts (§410)**

- **No max. travel distance**
- **12 sq. ft. max. platform floor area**
- **Min. egress width as required by the applicable life safety code must be maintained**
- **Platform enclosure or passenger restraining arms required**

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## Means of Egress

**Where platform lifts are allowed to be part of an accessible means of egress, they must have standby power as required by the International Building Code (IBC) §1007.**

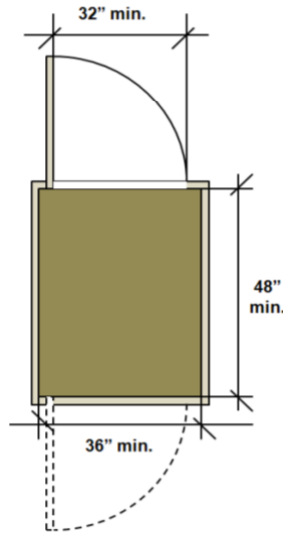
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## Platform Lifts (§410)

- **Controls must meet operable parts, including reach ranges**
- **Doors and gates must be power-operated, and meet requirements for low-energy doors, including the referenced ANSI/BHMA standard (§404.3), and remain open for at least 20 seconds.**
- **Platform must meet clear floor space (§305) openings and change in level (§302, §303).**

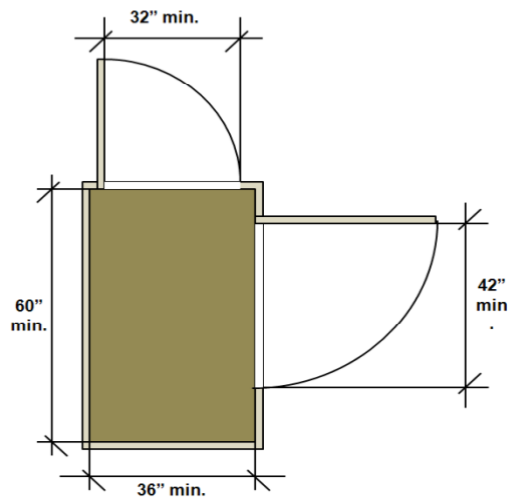
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# Platform Lifts (§410)



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# Platform Lifts (§410)



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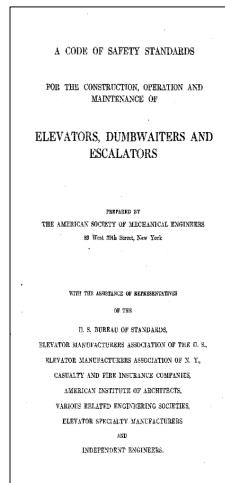
# Who Is the American Society of Mechanical Engineers (ASME)



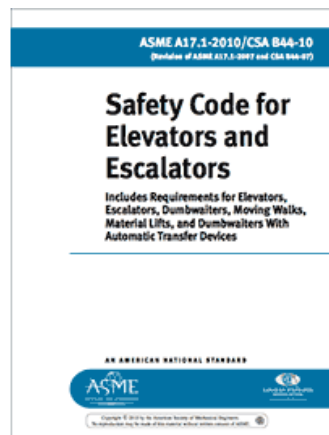
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## American Society of Engineers (ASME) published first A17.1 code in 1921

1921



2010 (next edition 2013)



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## Became Binational Code in 2007



**Note: Appendix E of ASME A17.1/CSA B44 contains accessibility requirements similar to ICC/ANSI A117.1.**

**Applicable in jurisdictions enforcing the National Building Code of Canada.**

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## A17/B44 Committee



- **Meets 3 times per year in US and Canadian locations**
- **29 subcommittees (Working Committees)**
- **7 separate codes/standards/guidelines**
- **Documents continually updated through Inquiries and Technical Revisions**

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# Accessible Elevators

## Myths and Facts

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### Car Size

**MYTH:** Wheelchair turning spaces are required in elevators

**FACT:** Turns are accomplished using the elevator landing with the doors open

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# Elevator Stop Buttons

**MYTH:** ADAAG requires emergency stop buttons in elevators

**FACT:** Emergency stop buttons are prohibited in new passenger elevators



**ASME A17.1/CSA B44  
2.26.2.5 Emergency Stop Switch.**

**An emergency stop switch shall not be provided on passenger elevators.**

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# Door-open Timing

**MYTH:** Doors must stay open for 20 seconds

**FACT:** Doors may begin to close after 3 seconds

7. Elevator
- a. The elevator doors remain open for a period of six seconds after reopening. Provide doors door automatically if the door becomes obstructed by an object or person. Ensure that the opening at heights of 5 inches and 29 inches above the finished floor; that door respond from notification that a car is answering a call until the doors of that car start to close is seconds. Standards §§ 1.1.3(5), 1.10.6, 1.10.7, 1.10.8, Figs. 20, 21.
  - b. Although emergency communications are provided in the elevator cars, a test of the equipment require voice communication, the highest operable part is a maximum of 48 inches above

**§407.2.7 Door Delay for Car Calls.**

**Elevator doors shall remain fully open in response to a car call for 3 seconds minimum.**

*-from DOJ Project Civic Access investigation report*

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# Handrails

**MYTH:** Handrails are required in elevator.

**FACT:** Required by neither national safety or accessibility codes/standards



*Handrail design is meant to assist persons in motion, not persons standing and stationary.*

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**ASME A17.1**

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## Destination-Oriented Elevator Systems



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## Destination Choice



- **Desired destination floor entered on keypad in lobby**
- **Smartcard option in secure buildings**
- **No floor buttons in car**

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## Destination Function Key



- Required by ICC/ANSI A117.1
- Activates audible/vocal cues for blind and visually impaired persons

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## Firefighters' Service



- Phase I returns car to designated floor
- Phase II provides firefighter control
- Activated by smoke detector in lobby, hoistway or machine room
- Critical for egress/evacuation use

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## Emergency Communication



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## Limited Use/Limited Application Elevator

- "Real" passenger elevator
- Regulated by A17.1/B44
- 18 sq. ft. maximum
- 25 ft. travel distance
- 30ft/min speed
- Cost effective in alterations
- Not restricted by ICC *International Building Code*



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# Private Residence Elevators

- Regulated by A17.1/B44
- **Never** permitted in commercial applications



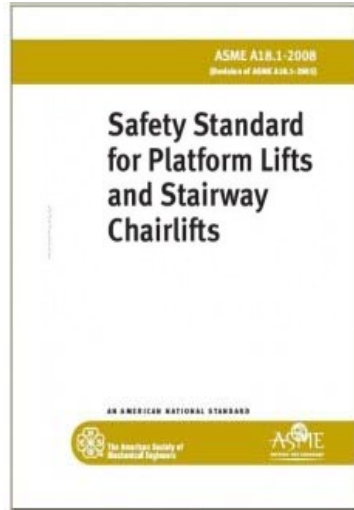
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# ASME A18

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# ASME A18.1



- Vertical lifts permitted to penetrate floors in newer editions
- Inclined lifts
- Commercial and private residence requirements

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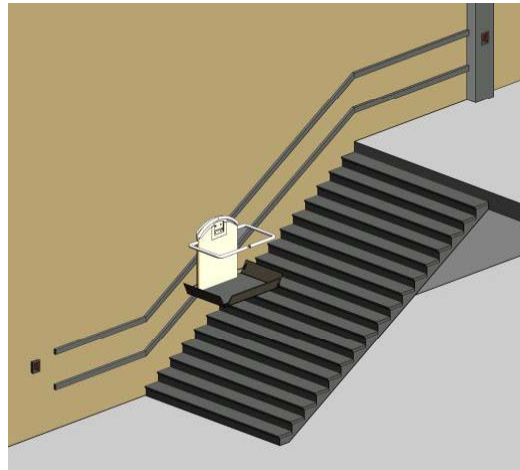
# ASME A18.1



**Enclosed and Unenclosed Platform Lifts**

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## ASME A18.1



**Incline Platform Lifts**

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**What is in the  
Future?**

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