Using the ADA & ABA Standards Series:
Chapter 4 – Accessible Routes

Presenters

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Session Agenda

- Walking Surfaces
- Doors, Doorways, & Gates
- Ramps
- Curb Ramps
- Elevators
- Limited-Use/Limited Application Elevators
- Residential Elevators
- Platform Lifts

Components of an accessible route

- Walking surfaces (slope ≤ 1:20)
- Ramps (slope ≤ 1:12*)
- Curb ramps excluding the flared sides
- Doorways
- Elevators
- Platform lifts (where permitted)
Walking Surfaces

§403

Walking surfaces (§403)

• Floor or ground surface:
  • Firm stable slip resistant
  • Carpet pile ≤ ½ inch
  • Openings ≤ ½ inch

• Running slope ≤ 1:20

• Cross slope ≤ 1:48

• Changes in level
  • ¼ inch vertical
  • ½ inch beveled
Clear width

Clear widths around a 180° turn
Passing space

Every 200ft:
60” x 60” minimum

Or
T-shaped

Handrails along walking surfaces

• If provided, must meet requirements in 505
  • 34” – 38” high
  • Unobstructed top and sides
  • Bottom gripping surface: obstructed up to 20%
  • Crash rails or bumper guards: full length can be obstructed
  • Other requirements in 505
Types of doors

• Manual doors
  • Swinging doors and gates
  • Sliding doors, Folding doors, Doorways

• Automatic doors
  • A156.10 Full-Powered Automatic Doors
  • A156.19 Low-Energy Power Operated Doors
  • A156.19 Power-Assisted Doors

• Interior vs Exterior
• Fire doors, Emergency exits
• Security doors
• Revolving doors
• Material: Glass doors
Doors, Doorways, Gates (§404)

- Clear Width (32” min.)
- Closing Speed
- Opening Force (5 lbf max)
- Vision/ Side Lights
- Compliant Hardware
- Smooth Surface
  - Bottom 10”, push side
- Thresholds (1/2”)
- Maneuvering Clearance
  - Both sides unless usable in 1 direction only

Clear width (§404.2.3)

32” min, 90° open

Allowable Projections

- Closer/ stop 78” min. above floor
- 80” min.
- 4” max. projection
- No projections below 34” AFF
Maneuvering clearances

Forward approach

* if door has closer and latch (otherwise 0")
Maneuvering clearances

Maneuvering clearance must be 8” max. from the face of the door

Recess > 8”: maneuvering clearance for forward approach located 8” max. from face of door
Doors in series (§404.2.6)
Doors opposite each other where travel through both doors is required.

Vestibules
Door maneuvering clearance required at each accessible door based on approach & swing
Vestibules

- Door maneuvering clearances can overlap
- Doors can swing into maneuvering clearance of another door

Recommendation:
*Wheelchair space beyond door swing*
Thresholds (§404.2.5)

Maximum allowed:
• ¼” vertical
• ½” beveled 1:2

Existing or altered:
• ¾” beveled allowed

Door hardware (§404.2.7)

• 1 hand operation
• No tight grasping, pinching, twisting of wrist
• 5 lbs max. force
  • Except: Fire Doors, Exterior Hinged Doors
• Height: 34” – 48”
Closing speed (§404.2.8)

Door closer
90° to 12°, 5 sec min

Spring hinge
70° to closed, 1.5 sec min

Door surfaces (§404.2.10)

- Push side only
- Surfaces within 10” of floor
- Exceptions:
  - Sliding doors
  - Some tempered glass doors without stiles
  - Existing doors, kickplates with caps
  - Doors / gates not extending to 10” above floor
Automatic and Power-assisted doors (§404.3)

- ANSI/BHMA Standards (for safety and operation)
- Thresholds (same as manual doors)
- Doors in series (same as manual doors)
- Clear width
- Break Out Opening
- Controls
- Maneuvering Clearance*

Clear width (§404.3.1)

- 32” minimum in power-on and power-off mode
- If both leaves open when activated the clear width is based on the opening provided by all leaves in the open position
Controls

Operable part, within reach range

Outside swing of the door

Maneuvering clearance at Automatic/Power assisted doors

A156.19 Power-Assisted Doors
• Compliance with 404.2.4 required

A156.10 Full-Powered Automatic Doors
&
A156.19 Low-Energy Power Operated Doors

• Compliance with 404.2.4 required at doors on accessible MOE that lack standby power or that do not stay open in power-off mode.
Ramps

§405

Clear Width (§405.5)
36" min. (between leading edge of handrails)

Handrails (§405.8)
on both sides if rise greater than 6"

Running Slope (§405.2)
1:12 max

Rise (§405.6)
30" max per run

Surfaces (§405.4)
firm, stable, and slip-resistant
(run and landing surfaces)

Cross Slope (§405.3)
1:48 max

Edge Protection (§405.9)
along ramp run and landings

Level Landings (§405.7)
at top and bottom

Alterations (§405.2)
Permitted running slopes where space is limited:
1:10 max (6" max rise) or 1:8 max (3" max rise)

Wet Conditions (§405.10)
Landings must be designed to prevent the accumulation of water.
Slopes in alterations

Table 405.2 Maximum Ramp Slope and Rise for Existing Sites, Buildings, and Facilities

<table>
<thead>
<tr>
<th>Slope</th>
<th>Maximum Rise</th>
</tr>
</thead>
<tbody>
<tr>
<td>Steeper than 1:10 but not steeper than 1:8</td>
<td>3 inches (75 mm)</td>
</tr>
<tr>
<td>Steeper than 1:12 but not steeper than 1:10</td>
<td>6 inches (150 mm)</td>
</tr>
</tbody>
</table>

1. A slope steeper than 1:8 is prohibited.

Landings
Ramps: edge protection (§405.9)

- Curb
- Rail or other barrier
- Vertical pickets
- Extended platform

Continuous handrails

Handrails:
Extensions must be linear, but can turn or wrap where handrails are continuous at the inside turn of dogleg or switchback ramps

Configuration:
Recommendation: Align runs less than 60” wide to the outer edge of landings for easier wheelchair maneuvering between runs
Curved routes

Wider accessible route
Max 1:48 cross slope

Curb Ramps

§406
Curb ramps (§406)

- Landing 36” deep min. required at top
- Curb ramp cannot protrude into access aisle

Curb ramps (§406)

Parallel curb ramps can be used where top landing space is unavailable
Smooth transition

Curb ramps with returned sides
Prevent / discourage foot traffic across ramp
Detectable warnings (§705)

**Required** on curb ramps at:
- Transit facilities (DOT standards – 406.8)
- FHWA funded projects
- Public sidewalks* (PROWAG)

**Not required** on curb ramps at other facilities or vehicular areas within a site

Vertical Access

Elevators, LULAs, and platform lifts
When to use which?

<table>
<thead>
<tr>
<th>Facility or Space</th>
<th>Elevator Type Permitted (if provided instead of ramp)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facilities required to provide an accessible route to stories/mezzanines</td>
<td>Elevator (§407)</td>
</tr>
<tr>
<td>Facilities not required to provide an accessible route to stories/mezzanines</td>
<td>Elevator (§407) or LULA (§408)</td>
</tr>
<tr>
<td>Residential Dwelling Units</td>
<td>Elevator (§407), LULA (§408), or Private Residence Elevator (§409)</td>
</tr>
<tr>
<td>Spaces permitted to be served by a platform lift</td>
<td>Elevator (§407), LULA (§408), or Platform Lift (§410)</td>
</tr>
</tbody>
</table>

Elevators

§407
Referenced Standards


Standard elevators

• Car sizes – more alternatives
• Designs providing turning space within car recognized
• Elevator Door Requirements
• Car Controls and Position Indicators
• Emergency Communication
Elevator landing requirements (§407.2)

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 / trim ring/ ferrule
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.

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
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

Limited Use/Limited Application Elevators

§408
**LULA elevators where permitted**

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

**LULA Requirements**

- Must comply with ASME A17.1
- Smaller car sizes, alternative types of doors
- Slower speeds, shorter travel distances
- No requirements for door timing/delay or car position indicators
- Doors must be positioned on the narrow wall of the LULA car
Private residence elevators

- 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
Platform Lifts
§410

Platform lifts

• Alterations
• In new construction, only:
  • wheelchair spaces, performance areas, and speakers’ platforms
  • incidental spaces with max occupancy of 5, & not for public use
  • raised courtroom stations
  • levels within transient lodging guest rooms and residential dwelling units
  • certain recreation facilities: amusement rides, play areas, team/player seating areas in sports facilities, recreational boating facilities, and fishing piers and platforms
ASME A18.1 Safety Standard
(§410.1)
Covers the design, construction, installation, operation, inspection, testing, maintenance, and repair of lifts that are intended for transportation by persons with disabilities.

Platform Lifts

- Can be vertical or inclined (utilizing stairways)
- Exposed or enclosed in a shaft similar to private residential elevators
- Lifts that utilize a chair instead of a platform are not permitted
Platform lifts

Platforms (§410.2 - §410.4)
Platforms must meet requirements for clear floor space and floor surfaces, including changes in level, and the clearance between the platform sill and edge of runway landing cannot exceed 1 1/2" (ASME A18.1 specifies 3/8" - 3 1/4").

Doors and Gates (§410.6)
Doors and gates must be power-operated, meet criteria for low-energy doors, including the referenced ANSI/SHMA standard (§404.3), and remain open for at least 20 seconds. (Self-closing manual types are allowed at lifts with no more than 2 stops and doors/ gates on opposite ends.)

Standby Power (§207.2)
Platform lifts permitted to be part of an accessible means of egress by the referenced editions of the International Building Code must be equipped with standby power.

Operable Parts (§410.5)
Controls must meet requirements for operable parts, including reach ranges.

Platform lifts

The clear floor space of platforms must be 36" wide min. If doors/gates are on the narrow end only, the length is 48" min. If a door/gate is on the longer side, the min. length is 60" to accommodate side approach maneuvering.
Technical Guides on the Standards
Available on the Board’s website

Questions?
You May Type and Submit questions in the Q&A Box
(We will NOT be monitoring the Chat area for questions)
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AIA Provider Number: 1017
AICP Provider Name: Great Lakes ADA Center

Course Title: Using the ADA and ABA Standards Series: Chapter 4: Accessible Routes
Course Number: GL20200507
Date: May 7, 2020

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Questions will be addressed at the conclusion of this presentation.
Thank you for participating in today’s webinar

Next session:
June 4, 2020

USING THE ADA AND ABA STANDARDS SERIES: CHAPTER 5: GENERAL SITE & BUILDING ELEMENTS

2:30 pm – 4:00 pm EST
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