~~CHAPTER~~ *DIVISION* 4: ACCESSIBLE ROUTES

***11B*-401 General**

***11B*-401.1 Scope.** The provisions of ~~Chapter~~ *Division* 4 shall apply where required by ~~Chapter~~ *Division* 2 or where referenced by a requirement in this chapter.

***11B*-402 Accessible Routes**

***11B*-402.1 General.** Accessible routes shall comply with *11B*-402.

***11B*-402.2 Components.** Accessible routes shall consist of one or more of the following components: walking surfaces with a running slope not steeper than 1:20, doorways, ramps, curb ramps excluding the flared sides, elevators, and platform lifts. All components of an accessible route shall comply with the applicable requirements of ~~Chapter~~ *Division* 4.

***11B*-403 Walking Surfaces**

***11B*-403.1 General.** Walking surfaces that are a part of an accessible route shall comply with *11B*-403.

***11B*-403.2 Floor or Ground Surface.** Floor or ground surfaces shall comply with *11B*-302.

***11B*-403.3 Slope.** The running slope of walking surfaces shall not be steeper than 1:20. The cross slope of walking surfaces shall not be steeper than 1:48.

***11B*-403.4 Changes in Level.** Changes in level shall comply with *11B*-303.

***11B*-403.5 Clearances.** Walking surfaces shall provide clearances complying with *11B*-403.5.

EXCEPTION: Within employee work areas, clearances on common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

***11B*-403.5.1 Clear Width.** Except as provided in *11B*-403.5.2 and *11B*-403.5.3, the clear width of walking surfaces shall be 36 inches (914 mm) minimum.

~~**EXCEPTION**~~

EXCEPTIONS: 1. The clear width shall be permitted to be reduced to 32 inches (813 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1219 mm) long minimum and 36 inches (914 mm) wide minimum.

2. *Corridors and hallways serving an occupant load of 10 or more shall not be less than 44 inches (1118 mm) in width.*

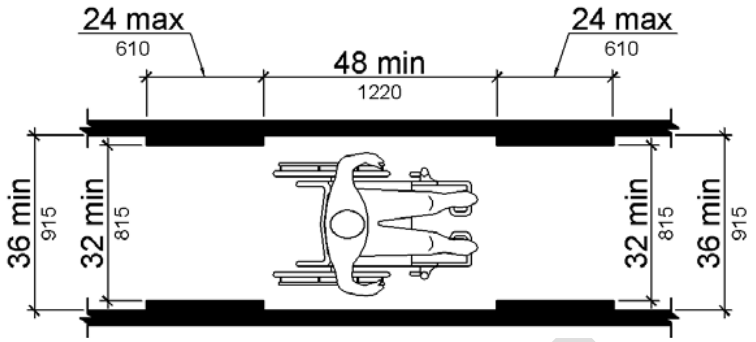


Figure 403.5.1
Clear Width of an Accessible Route

***11B*-403.5.2 Clear Width at Turn.** Where the accessible route makes a 180 degree turn around an element which is less than 48 inches (1219 mm) wide, clear width shall be 42 inches (1067 mm) minimum approaching the turn, 48 inches (1219 mm) minimum at the turn and 42 inches (1067 mm) minimum leaving the turn.

EXCEPTION: Where the clear width at the turn is 60 inches (1524 mm) minimum compliance with *11B*-403.5.2 shall not be required.

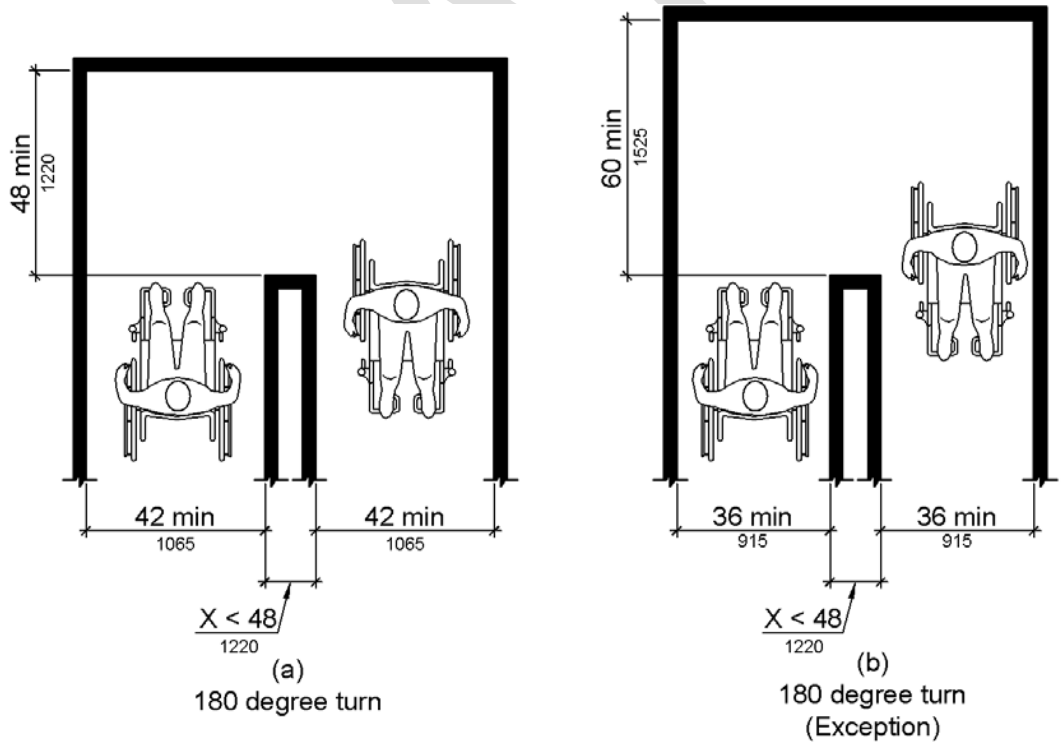


Figure *11B*-403.5.2
Clear Width at Turn

***11B*-403.5.3 Passing Spaces.** An accessible route with a clear width less than 60 inches (1524 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either: a space 60 inches (1524 mm) minimum by 60 inches (1524 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with *11B*-304.3.2 where the base and arms of the T-shaped space extend 48 inches (1219 mm) minimum beyond the intersection.

***11B*-403.6 Handrails.** Where handrails are provided along walking surfaces with running slopes not steeper than 1:20 they shall comply with *11B*-505.

***11B*-404 Doors, Doorways, and Gates**

***11B*-404.1 General.** Doors, doorways, and gates that are part of an accessible route shall comply with *11B*-404.

EXCEPTION: 1. Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with *11B*-404.2.7, *11B*-404.2.8, *11B*-404.2.9, *11B*-404.3.2 and *11B*-404.3.4 through *11B*-404.3.7. *A sign shall be posted stating "All doors and gates are restricted and controlled by an attendant".*

***11B*-404.2 Manual Doors, Doorways, and Manual Gates.** Manual doors and doorways and manual gates intended for user passage shall comply with *11B*-404.2.

***11B*-404.2.1 Revolving Doors, Gates, and Turnstiles.** Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

***11B*-404.2.2 Double-Leaf Doors and Gates.** At least one of the active leaves of doorways with two leaves shall comply with *11B*-404.2.3 and *11B*-404.2.4.

***11B*-404.2.3 Clear Width.** Door openings shall provide a clear width of 32 inches (813 mm) minimum. Clear openings of doorways with swinging doors shall be measured between the face of the door and the stop, with the door open 90 degrees. Openings more than 24 inches (610 mm) deep shall provide a clear opening of 36 inches (914 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (864 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (864 mm) and 80 inches (2032 mm) above the finish floor or ground shall not exceed 4 inches (102 mm).

EXCEPTIONS: 1. In alterations, a projection of 5/8 inch (16 mm) maximum into the required clear width shall be permitted for the latch side stop.
2. Door closers and door stops shall be permitted to be 78 inches (1981 mm) minimum above the finish floor or ground.

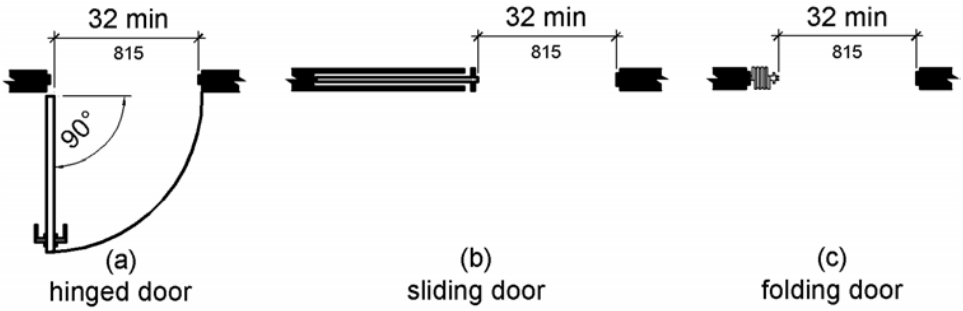


Figure *11B*-404.2.3
Clear Width of Doorways

***11B*-404.2.4 Maneuvering Clearances.** Minimum maneuvering clearances at doors and gates shall comply with *11B*-404.2.4. Maneuvering clearances shall extend the full width of the doorway and the required latch side or hinge side clearance.

~~**EXCEPTION:** Entry doors to hospital patient rooms shall not be required to provide the clearance beyond the latch side of the door.~~

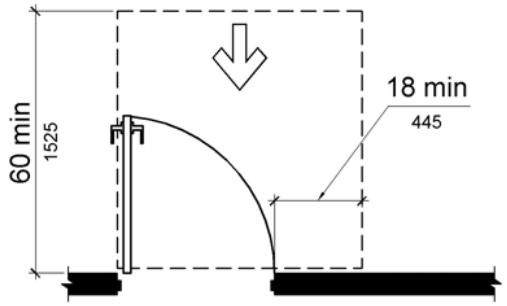
***11B*-404.2.4.1 Swinging Doors and Gates.** Swinging doors and gates shall have maneuvering clearances complying with Table *11B*-404.2.4.1.

Table *11B*-404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates

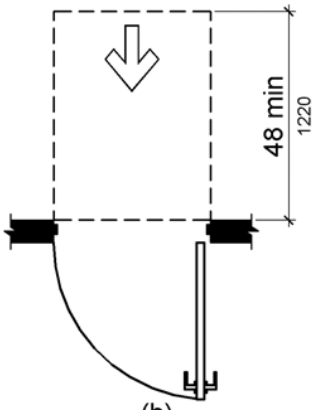
Type of Use		**Minimum Maneuvering Clearance**	
Approach Direction	**Door or Gate Side**	**Perpendicular to Doorway**	**Parallel to Doorway (beyond latch side unless noted)**
From front	Pull	60 inches (1524 mm)	18 inches (457 mm)~~5~~
From front	Push	48 inches (1219 mm)	0 inches (0 mm)[1]
From hinge side	Pull	60 inches (1524 mm)	36 inches (914 mm)
From hinge side	Pull	~~*54 inches (1370 mm)*~~ *60 inches (1524 mm)*	~~*42 inches (1065 mm)*~~ *44 inches (1118 mm)*
From hinge side	Push	~~*42 inches (1065 mm)*~~ *44 inches (1118 mm)*[2]	22 inches (559 mm)[3]
From latch side	Pull	~~48 inches (1220 mm)~~ *60 inches (1524 mm)*[4]	24 inches (610 mm)
From latch side	Push	~~*42 inches (1065 mm)*~~ *44 inches (1118 mm)*[4]	24 inches (610 mm)

1. Add 12 inches (305 mm) if closer and latch are provided.
2. Add ~~6 inches (150 mm)~~ 4 inches (102 mm) if closer and latch are provided.
3. Beyond hinge side.
4. Add 6 inches (152 mm) if closer is provided.

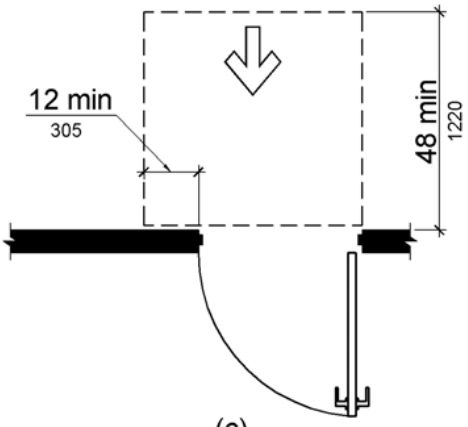
5. Add 6 inches (152 mm) at exterior conditions.



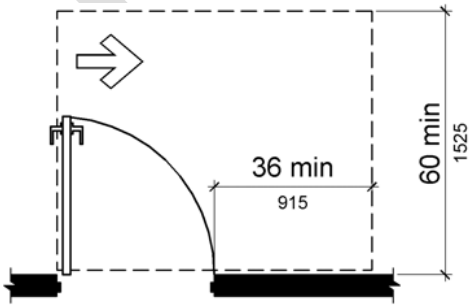
(a)
front approach, pull side



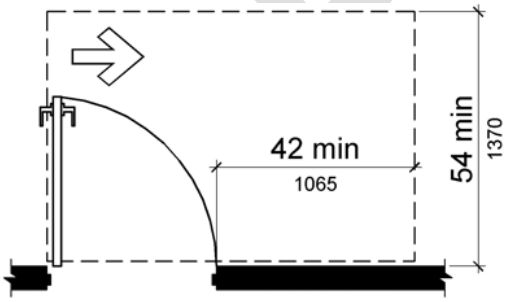
(b)
front approach, push side



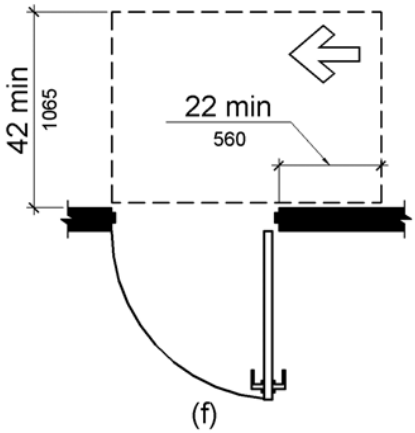
(c)
front approach, push side, door provided with both closer and latch



(d)
hinge approach, pull side



(e)
hinge approach, pull side



(f)
hinge approach, push side

Figure *11B*-404.2.4.1
Maneuvering Clearances at Manual Swinging Doors and Gates

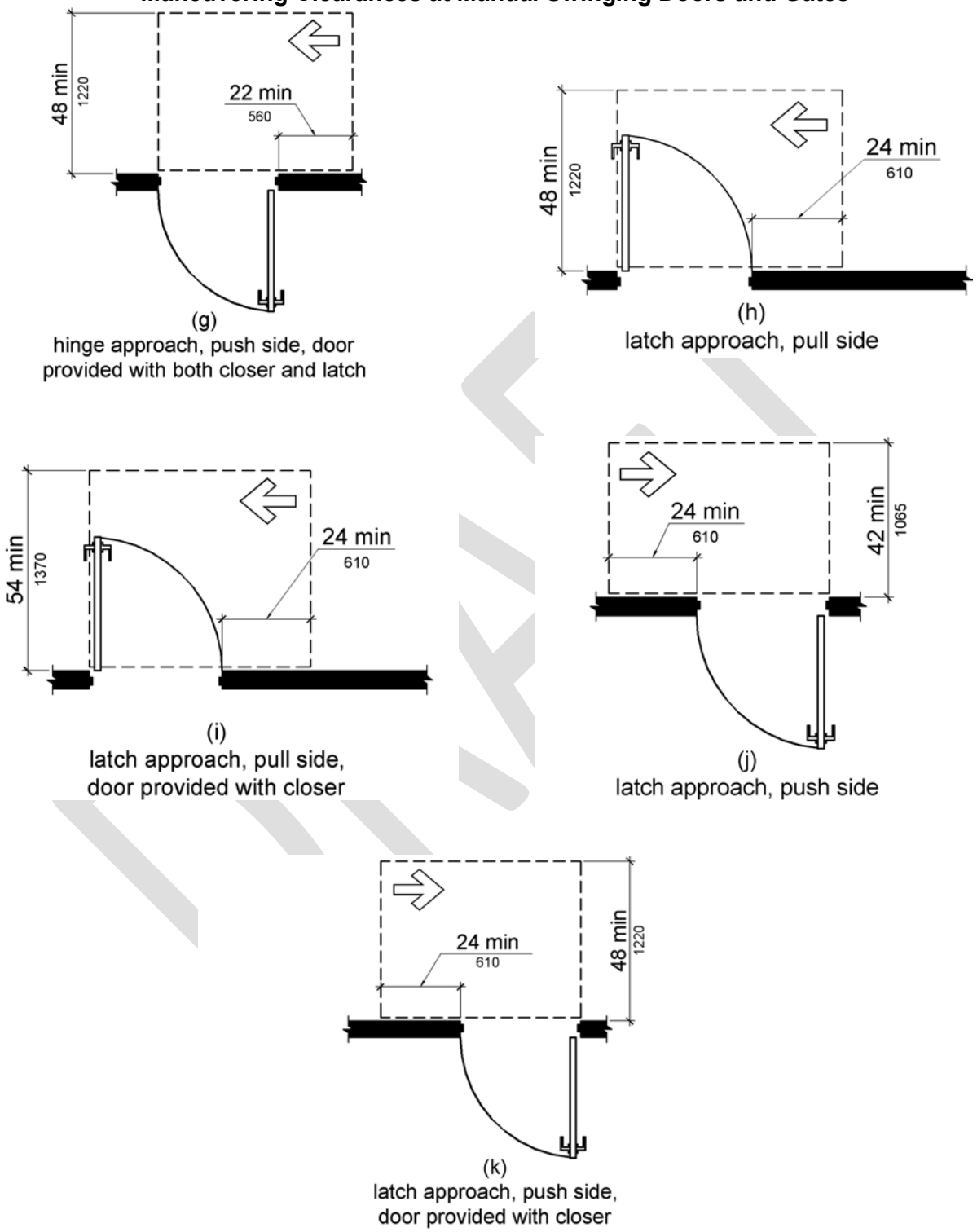


Figure *11B*-404.2.4.1

Maneuvering Clearances at Manual Swinging Doors and Gates

***11B*-404.2.4.2 Doorways without Doors or Gates, Sliding Doors, and Folding Doors.** Doorways less than 36 inches (914 mm) wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table *11B*-404.2.4.2.

Table *11B*-404.2.4.2 Maneuvering Clearances at Doorways without Doors or Gates, Manual Sliding Doors, and Manual Folding Doors

	Minimum Maneuvering Clearance	
Approach Direction	**Perpendicular to Doorway**	**Parallel to Doorway (beyond stop/latch side unless noted)**
From Front	48 inches (1219 mm)	0 inches (0 mm)
From side[1]	42 inches (1067 mm)	0 inches (0 mm)
From pocket/hinge side	42 inches (1067 mm)	22 inches (559 mm)[2]
From stop/latch side	42 inches (1067 mm)	24 inches (610 mm)

1. Doorway with no door only.
2. Beyond pocket/hinge side.

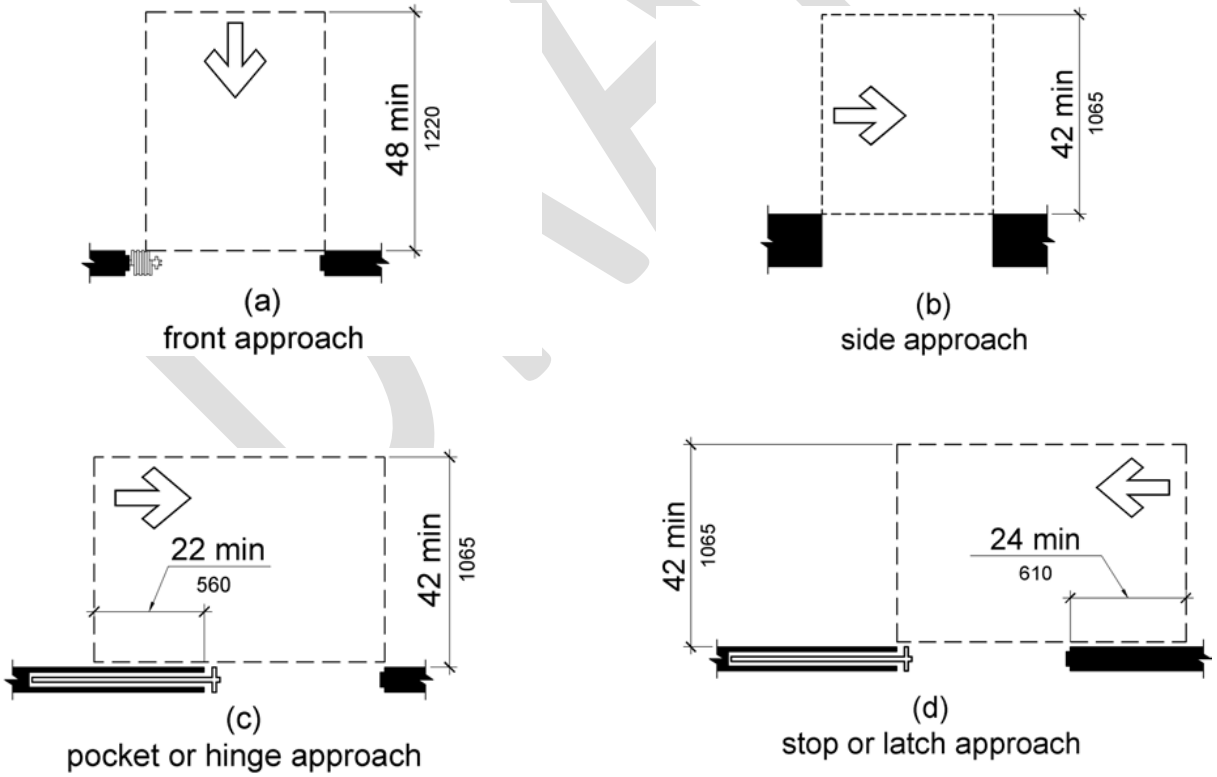


Figure *11B*-404.2.4.2
Maneuvering Clearances at Doorways without Doors, Sliding Doors,

Gates, and Folding Doors

***11B*-404.2.4.3 Recessed Doors and Gates.** Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (457 mm) of the latch side of a doorway projects more than 8 inches (203 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

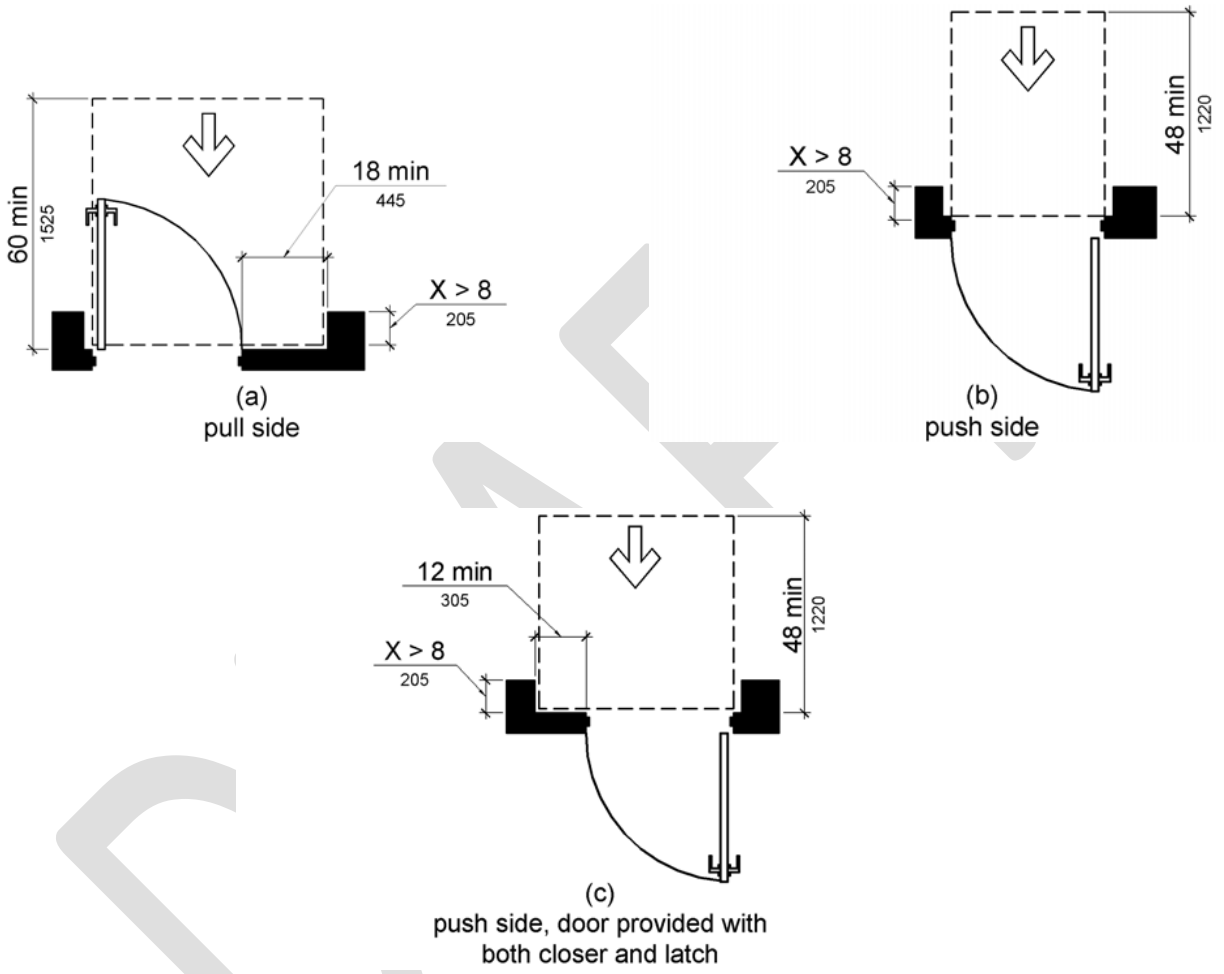


Figure *11B*-404.2.4.3
Maneuvering Clearances at Recessed Doors and Gates

***11B*-404.2.4.4 Floor or Ground Surface.** Floor or ground surface within required maneuvering clearances shall comply with *11B*-302. Changes in level are not permitted.

EXCEPTIONS: 1. Slopes not steeper than 1:48 shall be permitted.
2. Changes in level at thresholds complying with *11B*-404.2.5 shall be permitted.

***11B*-404.2.5 Thresholds.** Thresholds, if provided at doorways, shall be ½ inch (13 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with *11B*-302 and *11B*-303.

EXCEPTION: Existing or altered thresholds ¾ inch (19 mm) high maximum that have a beveled edge on each side with a slope not steeper than 1:2 shall not be required to comply with *11B*-404.2.5.

***11B*-404.2.6 Doors in Series and Gates in Series.** The distance between two hinged or pivoted doors in series and gates in series shall be 48 inches (1219 mm) minimum plus the width of doors or gates swinging into the space.

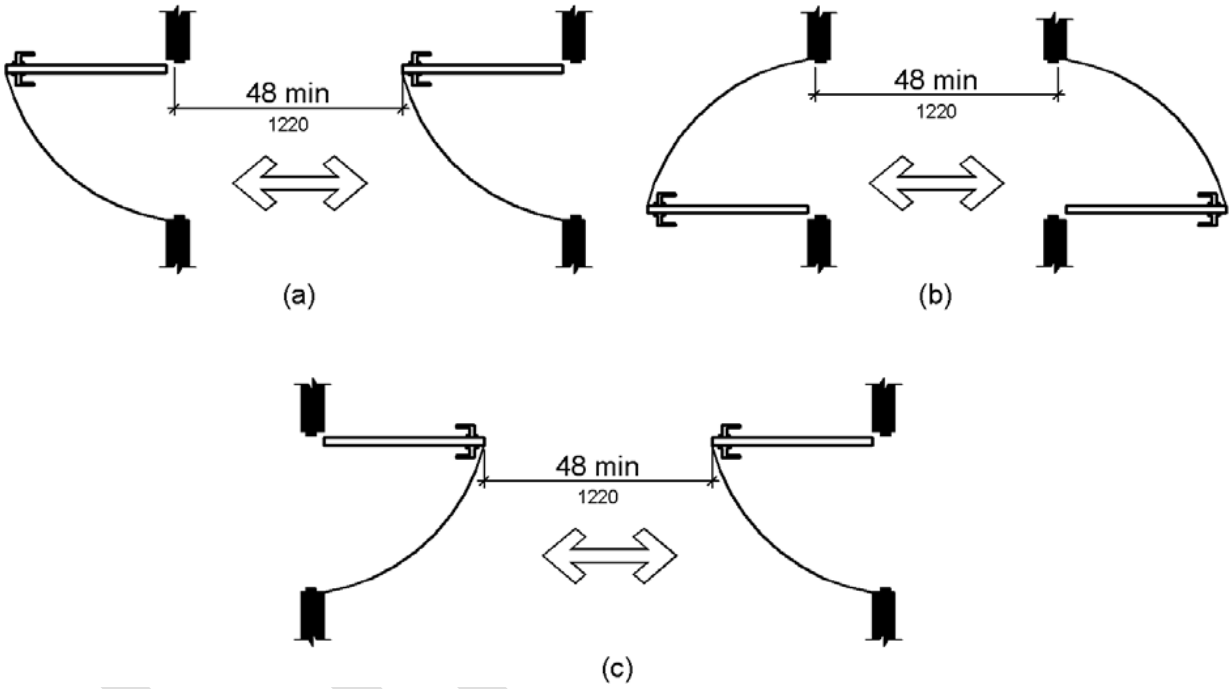


Figure *11B*-404.2.6
Doors in Series and Gates in Series

***11B*-404.2.7 Door and Gate Hardware.** Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with *11B*-309.4. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1219 mm) maximum above the finish floor or ground. Where sliding doors are in the fully open position, operating hardware shall be exposed and usable from both sides.

EXCEPTIONS: 1. Existing locks shall be permitted in any location at existing glazed doors without stiles, existing overhead rolling doors or grilles, and similar existing doors or grilles that are designed with locks that are activated only at the top or bottom rail.
2. Access gates in barrier walls and fences protecting pools, spas, and hot tubs shall be permitted to have operable parts of the release of latch on self-latching devices at 54

inches (1372 mm) maximum above the finish floor or ground provided the self-latching devices are not also self-locking devices and operated by means of a key, electronic opener, or integral combination lock.

***11B*-404.2.8 Closing Speed.** Door and gate closing speed shall comply with *11B*-404.2.8.

***11B*-404.2.8.1 Door Closers and Gate Closers.** Door closers and gate closers shall be adjusted so that from an open position of 90 degrees, the time required to move the door to a position of 12 degrees from the latch is 5 seconds minimum.

***11B*-404.2.8.2 Spring Hinges.** Door and gate spring hinges shall be adjusted so that from the open position of 70 degrees, the door or gate shall move to the closed position in 1.5 seconds minimum.

***11B*-404.2.9 Door and Gate Opening Force.** ~~Fire doors shall have a minimum opening force allowable by the appropriate administrative authority.~~ The force for pushing or pulling open a door or gate other than fire doors shall be as follows:

1. Interior hinged doors and gates: 5 pounds (22.2 N) maximum.
2. Sliding or folding doors: 5 pounds (22.2 N) maximum.
3. Required fire doors: the minimum opening force allowable by the appropriate administrative authority, not to exceed 15 lb (66.7 N).
4. Exterior hinged doors: 5 pounds (22.2 N) maximum.

These forces do not apply to the force required to retract latch bolts or disengage other devices that hold the door or gate in a closed position.

***EXCEPTIONS: 1.** Exterior doors to machinery spaces including, but not limited to, elevator pits or elevator penthouses; mechanical, electrical or communications equipment rooms; piping or equipment catwalks; electric substations and transformer vaults; and highway and tunnel utility facilities.*

***2.** When, at a single location, one of every 8 exterior door leafs, or fraction of 8, is a powered door, other exterior doors at the same location, serving the same interior space, may have a maximum opening force of 8.5 lb (37.8 N). The powered leaf(s) shall be located closest to the accessible route.*

a. *Powered doors shall comply with 11B-404.3. Powered doors shall be fully automatic doors complying with Builders Hardware Manufacturers' Association (BHMA) A156.10 or low energy operated doors complying with BHMA A156.19.*

b. *Powered doors serving a building or facility with an occupancy of 150 or more shall be provided with a back-up battery or back-up generator. The back-up power source shall be able to cycle the door a minimum of 100 cycles.*

c. *Powered doors shall be controlled on both the interior and exterior sides of the doors by sensing devices, push plates, vertical actuation bars or other similar operating devices complying with Divisions 11B-304, 11B-305 and 11B-308.*

At each location where push plates are provided there shall be two push plates; the centerline of one push plate shall be 7 inches (178 mm) minimum and 8

inches (203 mm) maximum above the floor or ground surface and the centerline of the second push plate shall be 30 inches (762 mm) minimum and 44 inches (1219 mm) maximum above the floor or ground surface. Each push plate shall be a minimum of 4 inches (102 mm) diameter or a minimum of 4 inches by 4 inches (102 mm by 102 mm) square and shall display the International Symbol of Accessibility complying with Division 11B-703.7.

At each location where vertical actuation bars are provided the operable portion shall be located so the bottom is 5 inches (127 mm) maximum above the floor or ground surface and the top is 35 inches (889 mm) minimum above the floor or ground surface. The operable portion of each vertical actuation bar shall be a minimum of 2 inches (51 mm) wide and shall display the International Symbol of Accessibility complying with Division 11B-703.7.

Where push plates, vertical actuation bars or other similar operating devices are provided, they shall be placed in a conspicuous location. A level and clear floor or ground space for forward or parallel approach complying with Division 11B-305 shall be provided, centered on the operating device. Doors shall not swing into the required clear floor or ground space.

d. *Signage identifying the accessible entrance required by Division 11B-216.6 shall be placed on, or immediately adjacent to, each powered door. Signage shall be provided in compliance with BHMA A156.10 or BHMA 156.19, as applicable.*

e. *In addition to the requirements of Item d, where a powered door is provided in buildings or facilities containing assembly occupancies of 300 or more, a sign displaying the International Symbol of Accessibility measuring 6 inches by 6 inches (152 mm by 152 mm), complying with Division 11B-703.7, shall be provided above the door on both the interior and exterior sides of each powered door.*

***11B*-404.2.10 Door and Gate Surfaces.** Swinging door and gate surfaces within 10 inches (255 mm) of the finish floor or ground measured vertically shall have a smooth surface on the push side extending the full width of the door or gate. Parts creating horizontal or vertical joints in these surfaces shall be within 1/16 inch (1.6 mm) of the same plane as the other. Cavities created by added kick plates shall be capped.

EXCEPTIONS: 1. Sliding doors shall not be required to comply with *11B*-404.2.10.
2. Tempered glass doors without stiles and having a bottom rail or shoe with the top leading edge tapered at 60 degrees minimum from the horizontal shall not be required to meet the 10 inch (254 mm) bottom smooth surface height requirement.
3. Doors and gates that do not extend to within 10 inches (254 mm) of the finish floor or ground shall not be required to comply with *11B*-404.2.10.
4. Existing doors and gates without smooth surfaces within 10 inches (254 mm) of the finish floor or ground shall not be required to provide smooth surfaces complying with *11B*-404.2.10 provided that if added kick plates are installed, cavities created by such kick plates are capped.

***11B*-404.2.11 Vision Lights.** Doors, gates, and side lights adjacent to doors or gates, containing one or more glazing panels that permit viewing through the panels shall have the bottom of at least one glazed panel located 43 inches (1092 mm) maximum above the finish floor.

EXCEPTION: Vision lights with the lowest part more than 66 inches (1676 mm) from the finish floor or ground shall not be required to comply with *11B*-404.2.11.

***11B*-404.3 Automatic and Power-Assisted Doors and Gates.** Automatic doors and automatic gates shall comply with *11B*-404.3. Full-powered automatic doors shall comply with ANSI/BHMA A156.10 ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~. Low-energy and power-assisted doors shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~.

***11B*-404.3.1 Clear Width.** Doorways shall provide a clear opening of 32 inches (813 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway *shall provide a clear, unobstructed opening of 32 inches (813 mm) with one leaf positioned at an angle of 90 degrees from its closed position.* ~~shall be based on the clear opening provided by all leaves in the open position.~~

***11B*-404.3.2 Maneuvering Clearance.** Clearances at power-assisted doors and gates shall comply with *11B*-404.2.4. Clearances at automatic doors and gates without standby power and serving an accessible means of egress shall comply with *11B*-404.2.4.

EXCEPTION: ***1.*** Where automatic doors and gates remain open in the power-off condition, compliance with *11B*-404.2.4 shall not be required.

***11B*-404.3.3 Thresholds.** Thresholds and changes in level at doorways shall comply with *11B*-404.2.5.

***11B*-404.3.4 Doors in Series and Gates in Series.** Doors in series and gates in series shall comply with *11B*-404.2.6.

***11B*-404.3.5 Controls.** Manually operated controls shall comply with *11B*-309. The clear floor space adjacent to the control shall be located beyond the arc of the door swing.

***11B*-404.3.6 Break Out Opening.** Where doors and gates without standby power are a part of a means of egress, the clear break out opening at swinging or sliding doors and gates shall be 32 inches (813 mm) minimum when operated in emergency mode.

EXCEPTION: Where manual swinging doors and gates comply with *11B*-404.2 and serve the same means of egress compliance with *11B*-404.3.6 shall not be required.

***11B*-404.3.7 Revolving Doors, Revolving Gates, and Turnstiles.** Revolving doors, revolving gates, and turnstiles shall not be part of an accessible route.

11B-405 Ramps

***11B*-405.1 General.** Ramps on accessible routes shall comply with *11B*-405.

EXCEPTION: In assembly areas, aisle ramps adjacent to seating and not serving elements required to be on an accessible route shall not be required to comply with *11B*-405.

***11B*-405.2 Slope.** Ramp runs shall have a running slope not steeper than 1:12.

~~**EXCEPTION:** In existing sites, buildings, and facilities, ramps shall be permitted to have running slopes steeper than 1:12 complying with Table *11B*- 405.2 where such slopes are necessary due to space limitations.~~

~~**Table *11B*-405.2 Maximum Ramp Slope and Rise for Existing Sites, Buildings, and Facilities**~~

~~**Slope**[1]~~	~~**Maximum Rise**~~
~~Steeper than 1:10 but not steeper than 1:8~~	~~3 inches (75 mm)~~
~~Steeper than 1:12 but not steeper than 1:10~~	~~6 inches (150 mm)~~
~~1. A slope steeper than 1:8 is prohibited.~~	

***11B*-405.3 Cross Slope.** Cross slope of ramp runs shall not be steeper than 1:48.

***11B*-405.4 Floor or Ground Surfaces.** Floor or ground surfaces of ramp runs shall comply with *11B*-302. Changes in level other than the running slope and cross slope are not permitted on ramp runs.

***11B*-405.5 Clear Width.** The clear width of a ramp run and, where handrails are provided, the clear width between handrails shall be ~~36 inches (915 mm)~~ *48 inches (1219 mm)* minimum.

EXCEPTION: Within employee work areas, the required clear width of ramps that are a part of common use circulation paths shall be permitted to be decreased by work area equipment provided that the decrease is essential to the function of the work being performed.

***11B*-405.6 Rise.** The rise for any ramp run shall be 30 inches (762 mm) maximum.

***11B*-405.7 Landings.** Ramps shall have landings at the top and the bottom of each ramp run. Landings shall comply with *11B*-405.7.

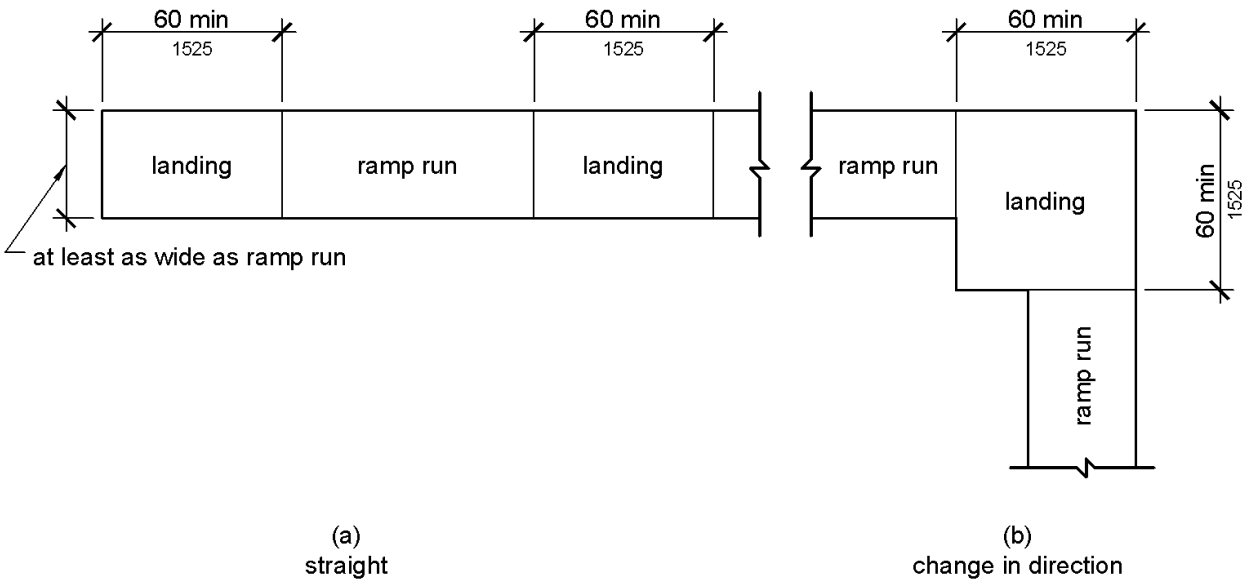


Figure *11B*-405.7
Ramp Landings

***11B*-405.7.1 Slope.** Landings shall comply with *11B*-302. Changes in level are not permitted.

EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

***11B*-405.7.2 Width.** The landing clear width shall be at least as wide as the widest ramp run leading to the landing.

***11B-405.7.2.1:** Top landings shall 60 inches (1524 mm) wide minimum.*

***11B*-405.7.3 Length.** The landing clear length shall be 60 inches (1524 mm) long minimum.

***11B-405.7.3.1:** Bottom landings shall extend 72 inches (1829 mm) minimum in the direction of ramp run.*

***11B*-405.7.4 Change in Direction.** Ramps that change direction between runs at landings shall have a clear landing ~~60 inches (1525 mm)~~ *72 inches (1829 mm)* minimum wide by ~~60 inches (1525 mm)~~ *72 inches (1829 mm)* minimum in the direction of ramp run.

***11B*-405.7.5 Doorways.** Where doorways are located adjacent to a ramp landing, maneuvering clearances required by *11B*-404.2.4 and *11B*-404.3.2 shall be permitted to overlap the required landing area.

***11B*-405.8 Handrails.** Ramp runs ~~with a rise greater than 6 inches (150 mm)~~ shall have handrails complying with *11B*-505.

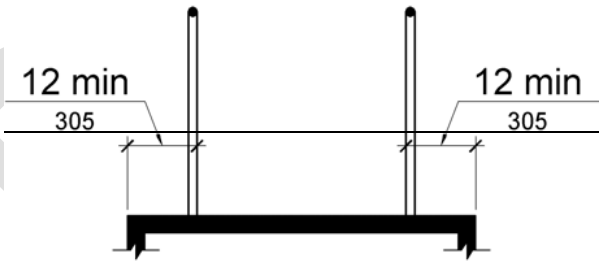
~~**EXCEPTION:** Within employee work areas, handrails shall not be required where ramps that are part of common use circulation paths are designed to permit the installation of handrails~~

~~complying with 505. Ramps not subject to the exception to 405.5 shall be designed to maintain a 36 inch (915 mm) minimum clear width when handrails are installed.~~
EXCEPTIONS: 1. *Handrails are not required at ramps immediately adjacent to fixed seating in assembly areas.*
2. *Curb ramps do not require handrails.*
3. *At door landings, handrails are not required on ramp runs less than 6 inches (152 mm) in rise or 72 inches (1829 mm) in length.*

***11B*-405.9 Edge Protection.** Edge protection complying with *11B*-405.9.1 ~~or 405.9.2~~ shall be provided on each side of ramp runs and at each side of ramp landings.

EXCEPTIONS: 1. Edge protection shall not be required on ramps that are not required to have handrails and have sides complying with *11B*-406.3.
2. Edge protection shall not be required on the sides of ramp landings serving an adjoining ramp run or stairway.
3. Edge protection shall not be required on the sides of ramp landings having a vertical drop-off of ½ inch (13 mm) maximum within 10 inches (254 mm) horizontally of the minimum landing area specified in *11B*-405.7.

~~**405.9.1 Extended Floor or Ground Surface.** The floor or ground surface of the ramp run or landing shall extend 12 inches (305 mm) minimum beyond the inside face of a handrail complying with 505.~~



~~**Figure 405.9.1**~~
~~**Extended Floor or Ground Surface Edge Protection**~~

~~**405.9.2**~~ ***11B-405.9.1*** **Curb or Barrier.** A curb *at least 2 inches (51 mm) high* or barrier shall be provided that prevents the passage of a 4 inch (102 mm) diameter sphere, where any portion of the sphere is within 4 inches (102 mm) of the finish floor or ground surface. *To prevent wheel entrapment, the curb or barrier shall provide a continuous and uninterrupted barrier along the length of the ramp.*

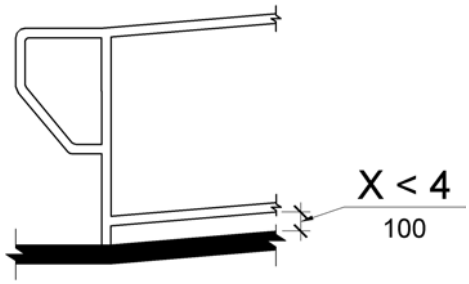


Figure *11B*-405.9.2
Curb or Barrier Edge Protection

***11B*-405.10 Wet Conditions.** Landings subject to wet conditions shall be designed to prevent the accumulation of water.

***11B*-406 Curb Ramps**

***11B*-406.1 General.** Curb ramps on accessible routes shall comply with *11B*-406, *11B*-405.2 through *11B*-405.5, and *11B*-405.10.

***11B*-406.2 Counter Slope.** Counter slopes of adjoining gutters and road surfaces immediately adjacent to *and within 48 inches (1219 mm) of the bottom of* the curb ramp shall not be steeper than 1:20. The adjacent surfaces at transitions at curb ramps to walks, gutters, and streets shall be at the same level.

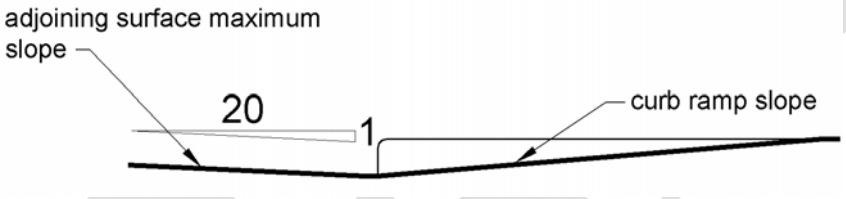


Figure *11B*-406.2
Counter Slope of Surfaces Adjacent to Curb Ramps

***11B*-406.3 Sides of Curb Ramps.** Where provided, curb ramp flares shall not be steeper than 1:10.

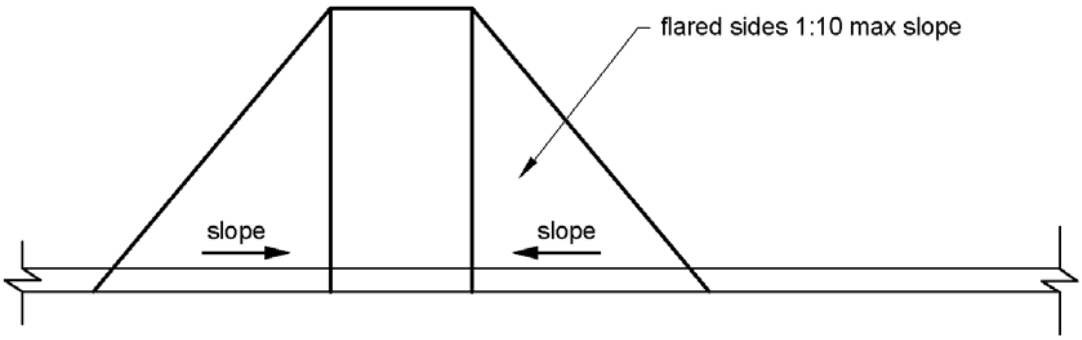


Figure *11B*-406.3
Sides of Curb Ramps

***11B*-406.4 Landings.** Landings shall be provided at the tops of curb ramps. The landing clear length shall be ~~36 inches (915 mm)~~ *48 inches (1219 mm)* minimum. The landing clear width shall be at least as wide as the curb ramp, excluding flared sides, leading to the landing.

EXCEPTION: In alterations, where there is no landing at the top of curb ramps, curb ramp flares shall be provided and shall not be steeper than 1:12.

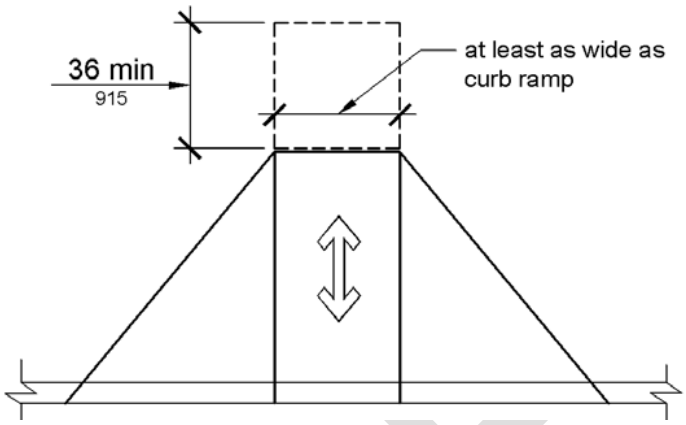


Figure *11B*-406.4
Landings at the Top of Curb Ramps

***11B*-406.5 Location.** Curb ramps and the flared sides of curb ramps shall be located so that they do not project into vehicular traffic lanes, parking spaces, or parking access aisles. Curb ramps at marked crossings shall be wholly contained within the markings, excluding any flared sides.

***11B*-406.6 Diagonal Curb Ramps.** Diagonal or corner type curb ramps with returned curbs or other well-defined edges shall have the edges parallel to the direction of pedestrian flow. The bottom of diagonal curb ramps shall have a clear space 48 inches (1219 mm) minimum outside active traffic lanes of the roadway. Diagonal curb ramps provided at marked crossings shall provide the 48 inches (1219 mm) minimum clear space within the markings. Diagonal curb ramps with flared sides shall have a segment of curb 24 inches (610 mm) long minimum located on each side of the curb ramp and within the marked crossing.

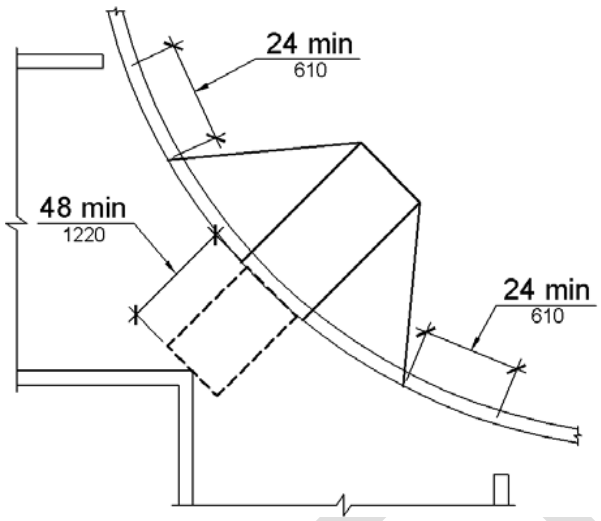


Figure *11B*-406.6
Diagonal or Corner Type Curb Ramps

***11B*-406.7 Islands.** Raised islands in crossings shall be cut through level with the street or have curb ramps at both sides. Each curb ramp shall have a level area 48 inches (1219 mm) long minimum by 36 inches (914 mm) wide minimum at the top of the curb ramp in the part of the island intersected by the crossings. Each 48 inch (1219 mm) minimum by 36 inch (914 mm) minimum area shall be oriented so that the 48 inch (1219 mm) minimum length is in the direction of the running slope of the curb ramp it serves. The 48 inch (1219 mm) minimum by 36 inch (914 mm) minimum areas and the accessible route shall be permitted to overlap.

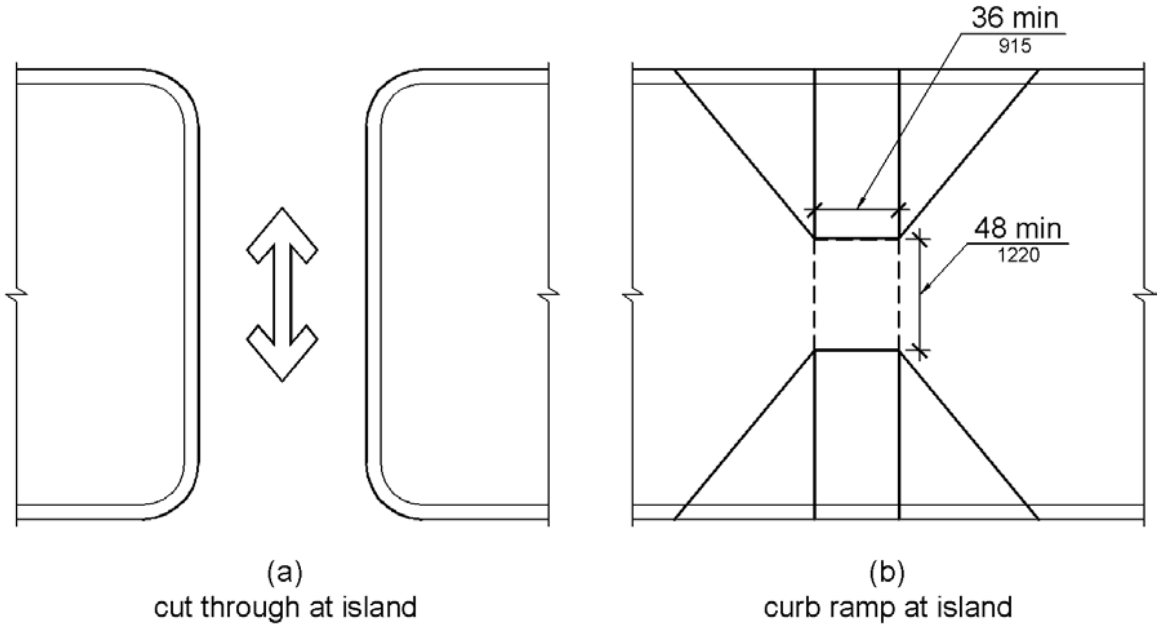


Figure 11B-406.7
Islands in Crossings

11B-*406.8 Parallel Curb Ramps*.

11B-406.8.1 Turning Space. *A turning space 48 inches (1219 mm) minimum by 48 inches (1219 mm) minimum shall be provided at the bottom of the curb ramps and shall be permitted to overlap other turning spaces and clear spaces. If the turning space is constrained on two or more sides, the turning space shall be 48 inches (1219 mm) minimum by 60 inches (1524 mm). The 60 inch (1524 mm) dimension shall be provided in the direction of the pedestrian street crossing.*

11B-406.8.2 Running Slope. *The running slope of the curb ramp shall be in-line with the direction of sidewalk travel. The running slope of the curb ramp shall be 1:20 minimum and 1:12 maximum but shall not require the ramp length to exceed 180 inches (4572 mm) minimum. The slope of the turning space shall not be steeper than 1:48.*

11B-*406.9 Grooved Border.* *Curb ramps shall have a grooved border 12 inches (305 mm) wide along the top of the curb ramp at the level surface of the top landing and at the outside edges of the flared sides. The grooved border shall consist of a series of grooves 1/4 inch (6.4 mm) wide by 1/4 inch (6.4 mm) deep, at and 3/4 inch (19 mm) on center.*

EXCEPTION: *On parallel curb ramps, the grooved border shall be placed the full width of the curb ramp at the level surface of the top landing.*

11B-*406.10 Detectable Warnings at Curb Ramps.* *Detectable warnings at curb ramps shall comply with 11B-406.10 and 11B-705.*

11B-406.10.1 Area Covered. *Detectable warning surfaces shall extend 36 inches (914 mm) in the direction of travel. Detectable warnings shall extend the full width of the ramp run excluding any flared sides.*

EXCEPTION: *On parallel curb ramps, detectable warning surface shall be placed on the turning space at the flush transition between the street and sidewalk.*

11B-406.10.2 Location. *The detectable warning shall be located so the edge nearest the curb line is 6 inches (152 mm) minimum and 8 inches (203 mm) maximum from the curb line.*

***11B*-407 Elevators**

***11B*-407.1 General.** Elevators shall comply with *11B*-407 and with ASME A17.1 ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~. They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

***11B*-407.2 Elevator Landing Requirements.** Elevator landings shall comply with *11B*-407.2.

***11B*-407.2.1 Call Controls.** Where elevator call buttons or keypads are provided, they shall comply with *11B*-407.2.1 and *11B*-309.4. Call buttons shall be raised ~~or flush~~ *a minimum 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm) above the surrounding surface*.

EXCEPTION: Existing elevators shall be permitted to have recessed call buttons.

***11B*-407.2.1.1 Height.** Call buttons and keypads shall be located within one of the reach ranges specified in *11B*-308, measured to the centerline of the highest operable part.

~~**EXCEPTION:** Existing call buttons and existing keypads shall be permitted to be located at 54 inches (1370 mm) maximum above the finish floor, measured to the centerline of the highest operable part.~~

***11B*-407.2.1.2 Size.** Call buttons shall be ¾ inch (19 mm) minimum in the smallest dimension.

~~**EXCEPTION:** Existing elevator call buttons shall not be required to comply with *11B*-407.2.1.2.~~

***11B*-407.2.1.3 Clear Floor or Ground Space.** A clear floor or ground space complying with *11B*-305 shall be provided at call controls.

***11B*-407.2.1.4 Location.** The call button that designates the up direction shall be located above the call button that designates the down direction.

EXCEPTION: Destination-oriented elevators shall not be required to comply with *11B*-407.2.1.4.

***11B*-407.2.1.5 Signals.** Call buttons shall have visible signals to indicate when each call is registered and when each call is answered.

EXCEPTION~~S~~: 1. Destination-oriented elevators shall not be required to comply with *11B*-407.2.1.5 provided that visible and audible signals complying with *11B*-407.2.2 indicating which elevator car to enter are provided.
~~**2.** Existing elevators shall not be required to comply with 407.2.1.5.~~

***11B*-407.2.1.6 Keypads.** Where keypads are provided, keypads shall be in a standard telephone keypad arrangement and shall comply with *11B*-407.4.7.2.

***11B*-407.2.2 Hall Signals.** Hall signals, including in-car signals, shall comply with *11B*-407.2.2.

***11B*-407.2.2.1 Visible and Audible Signals.** A visible and audible signal shall be provided at each hoistway entrance to indicate which car is answering a call and the car's direction of travel. Where in-car signals are provided, they shall be visible from the floor area adjacent to the hall call buttons.

EXCEPTION~~S~~: ~~1.~~ Visible and audible signals shall not be required at each destination-oriented elevator where a visible and audible signal complying with *11B*-407.2.2 is provided indicating the elevator car designation information.
~~**2.** In existing elevators, a signal indicating the direction of car travel shall not be required.~~

***11B*-407.2.2.2 Visible Signals.** Visible signal fixtures shall be centered at 72 inches (1830 mm) minimum above the finish floor or ground. The visible signal elements shall be a minimum 2 ½ inches (64 mm) *high by 2 ½ inches (64 mm) wide*. ~~measured along the vertical centerline of the element~~. Signals shall be visible from the floor area adjacent to the hall call button.

EXCEPTIONS: 1. Destination-oriented elevators shall be permitted to have signals visible from the floor area adjacent to the hoistway entrance.
~~**2.** Existing elevators shall not be required to comply with 407.2.2.2.~~

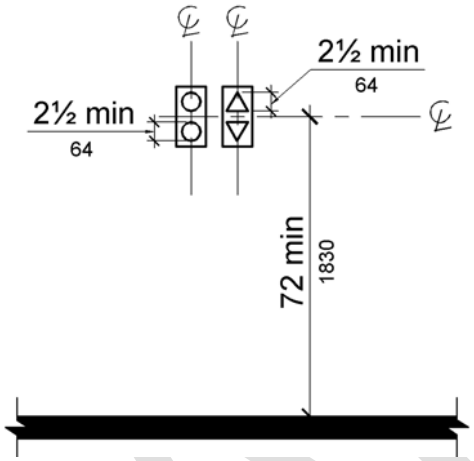


Figure *11B*-407.2.2.2
Visible Hall Signals

***11B*-407.2.2.3 Audible Signals.** Audible signals shall sound once for the up direction and twice for the down direction, or shall have verbal annunciators that indicate the direction of elevator car travel. Audible signals shall have a frequency of 1500 Hz maximum. Verbal annunciators shall have a frequency of 300 Hz minimum and 3000 Hz maximum. The audible signal and verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the hall call button.

EXCEPTIONS: 1. Destination-oriented elevators shall not be required to comply with *11B*-407.2.2.3 provided that the audible tone and verbal announcement is the same as those given at the call button or call button keypad.
~~**2.** Existing elevators shall not be required to comply with the requirements for frequency and dB range of audible signals.~~

***11B*-407.2.2.4 Differentiation.** Each destination-oriented elevator in a bank of elevators shall have audible and visible means for differentiation.

***11B*-407.2.3 Hoistway Signs.** Signs at elevator hoistways shall comply with *11B*-407.2.3.

***11B*-407.2.3.1 Floor Designation.** Floor designations complying with *11B*-703.2 and *11B*-703.4.1 shall be provided on both jambs of elevator hoistway entrances. Floor designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum. A tactile star*, placed to the left of the floor*

designation, shall be provided on both jambs at the main entry level. *The outside diameter of the star shall be 2 inches (51 mm) and all points shall be of equal length. Raised characters, including the star, shall be white on a black background.*

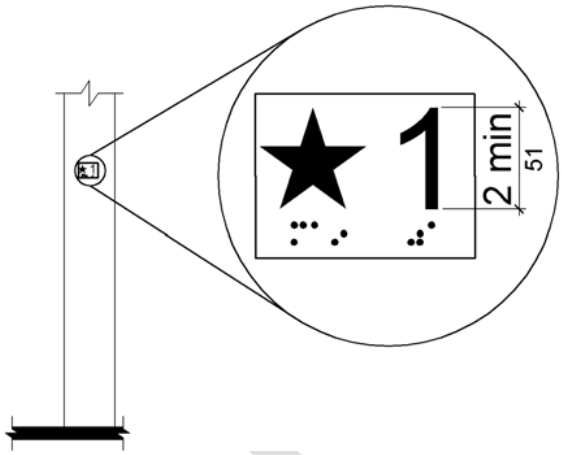


Figure *11B*-407.2.3.1
Floor Designations on Jambs of Elevator Hoistway Entrances

***11B*-407.2.3.2 Car Designations.** Destination-oriented elevators shall provide tactile car identification complying with *11B*-703.2 on both jambs of the hoistway immediately below the floor designation. Car designations shall be provided in both tactile characters and braille. Tactile characters shall be 2 inches (51 mm) high minimum.

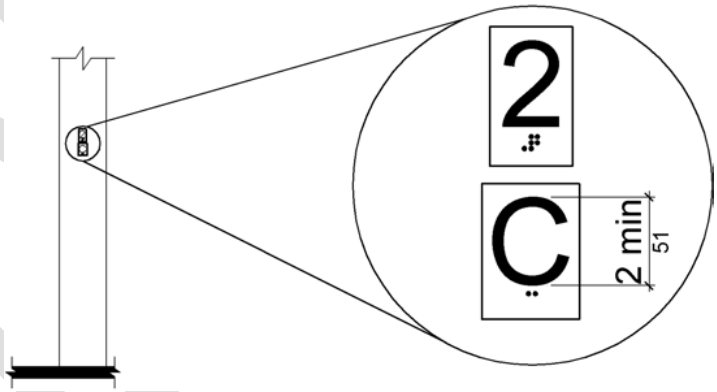


Figure *11B*-407.2.3.2
Car Designations on Jambs of Destination-Oriented Elevator Hoistway Entrances

***11B*-407.3 Elevator Door Requirements.** Hoistway and car doors shall comply with *11B*-407.3.

***11B*-407.3.1 Type.** Elevator doors shall be the horizontal sliding type. Car gates shall be prohibited.

***11B*-407.3.2 Operation.** Elevator hoistway and car doors shall open and close automatically.

EXCEPTION: Existing manually operated hoistway swing doors shall be permitted provided that they comply with *11B*-404.2.3 and *11B*-404.2.9. Car door closing shall not be initiated until the hoistway door is closed.

***11B*-407.3.3 Reopening Device.** Elevator doors shall be provided with a reopening device complying with *11B*-407.3.3 that shall stop and reopen a car door and hoistway door automatically if the door becomes obstructed by an object or person.

EXCEPTION: Existing elevators with manually operated doors shall not be required to comply with *11B*-407.3.3.

***11B*-407.3.3.1 Height.** The device shall be activated by sensing an obstruction passing through the opening at 5 inches (127 mm) nominal and 29 inches (737 mm) nominal above the finish floor.

***11B*-407.3.3.2 Contact.** The device shall not require physical contact to be activated, although contact is permitted to occur before the door reverses.

***11B*-407.3.3.3 Duration.** Door reopening devices shall remain effective for 20 seconds minimum.

***11B*-407.3.4 Door and Signal Timing.** The minimum acceptable time from notification that a car is answering a call or notification of the car assigned at the means for the entry of destination information until the doors of that car start to close shall be calculated from the following equation:

T = D/(1.5 ft/s) or T = D/(455 mm/s) = 5 seconds minimum where T equals the total time in seconds and D equals the distance (in feet or millimeters) from the point in the lobby or corridor 60 inches (1524 mm) directly in front of the farthest call button controlling that car to the centerline of its hoistway door.

EXCEPTIONS: 1. For cars with in-car lanterns, T shall be permitted to begin when the signal is visible from the point 60 inches (1524 mm) directly in front of the farthest hall call button and the audible signal is sounded.
2. Destination-oriented elevators shall not be required to comply with *11B*-407.3.4.

***11B*-407.3.5 Door Delay.** Elevator doors shall remain fully open in response to a car call for ~~3~~ *5* seconds minimum.

***11B*-407.3.6 Width.** The width of elevator doors shall comply with Table *11B*-407.4.1.

EXCEPTION: In existing elevators, a power-operated car door complying with *11B*-404.2.3 shall be permitted.

***11B*-407.4 Elevator Car Requirements.** Elevator cars shall comply with *11B*-407.4.

***11B*-407.4.1 Car Dimensions.** Inside dimensions of elevator cars and clear width of elevator doors shall comply with Table *11B*-407.4.1.

EXCEPTION: Existing elevator car configurations that provide a clear floor area of 16 square feet (1.5 m^2) minimum and also provide an inside clear depth 54 inches (1372 mm) minimum and a clear width 36 inches (914 mm) minimum shall be permitted.

Table *11B*-407.4.1 Elevator Car Dimensions

	Minimum Dimensions			
Door Location	**Door Clear Width**	**Inside Car, Side to Side**	**Inside Car, Back Wall to Front Return**	**Inside Car, Back Wall to Inside Face of Door**
Centered	42 inches (1067 mm)	80 inches (2032 mm)	51 inches (1295 mm)	54 inches (1372 mm)
Side (off-centered)	36 inches (914 mm)[1]	68 inches (1727 mm)	51 inches (1295 mm)	54 inches (1372 mm)
Any	36 inches (914 mm)[1]	54 inches (1372 mm)	80 inches (2032 mm)	80 inches (2032 mm)
Any	36 inches (914 mm)[2]	60 inches (1524 mm)[2]	60 inches (1524 mm)[2]	60 inches (1524 mm)[2]

1. A tolerance of minus ⅝ inch (16 mm) is permitted.
2. Other car configurations that provide a turning space complying with *11B*-304 with the door closed shall be permitted.

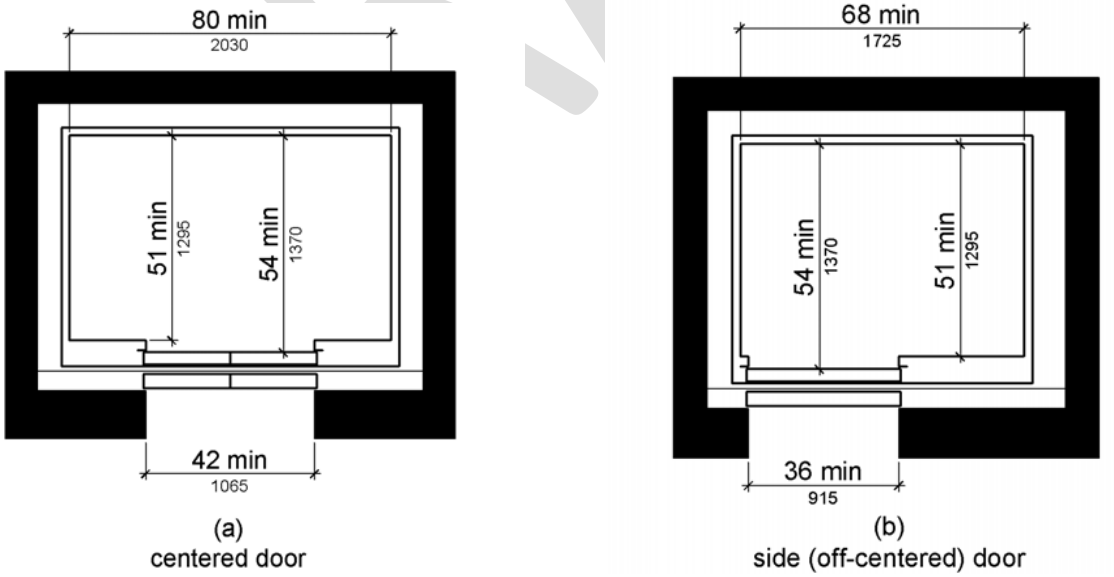


Figure *11B*-407.4.1
Elevator Car Dimensions

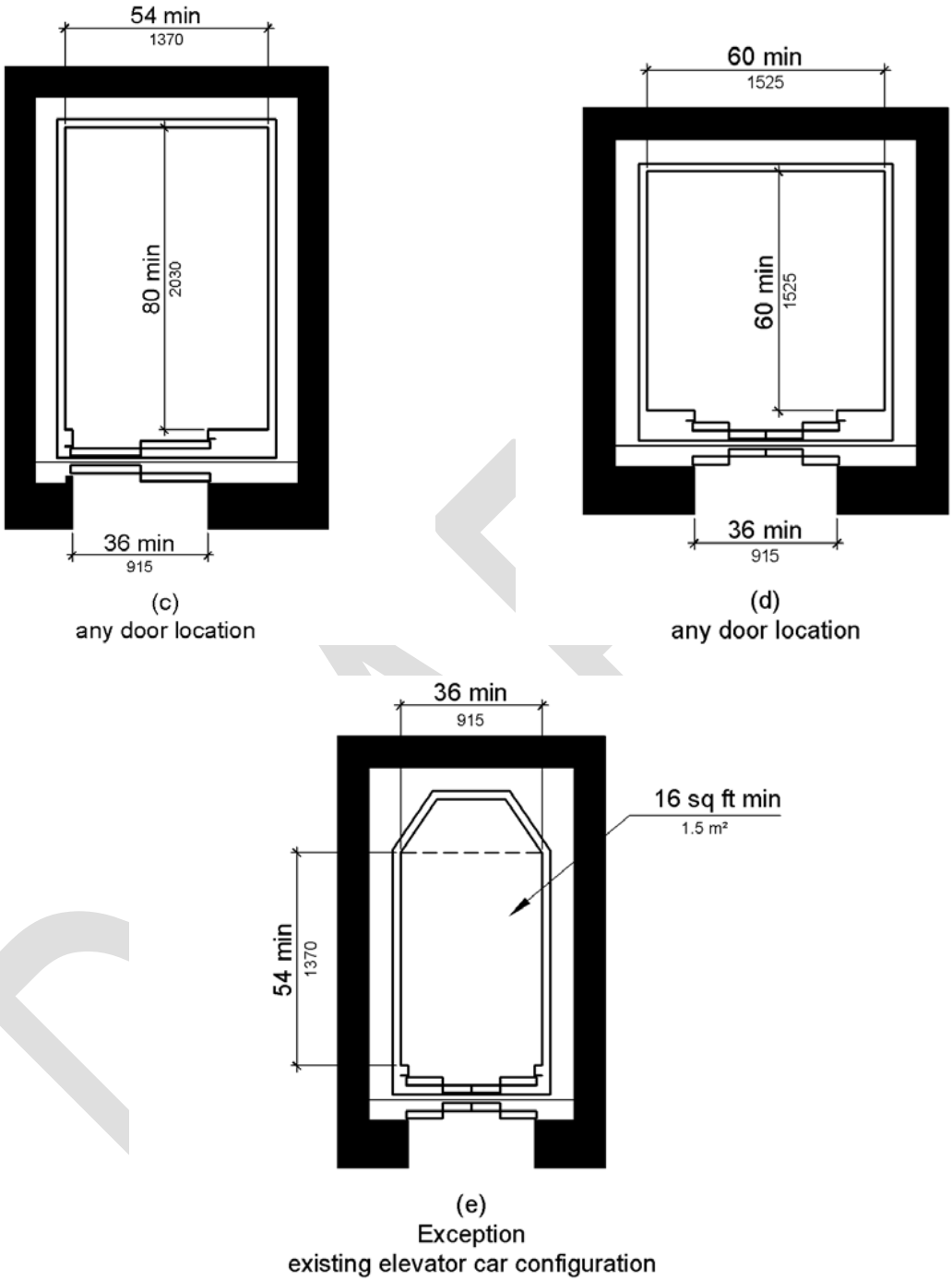


Figure *11B*-407.4.1
Elevator Car Dimensions

***11B*-407.4.2 Floor Surfaces.** Floor surfaces in elevator cars shall comply with *11B*-302 and *11B*-303.

***11B*-407.4.3 Platform to Hoistway Clearance.** The clearance between the car platform sill and the edge of any hoistway landing shall be 1¼ inch (32 mm) maximum.

***11B*-407.4.4 Leveling.** Each car shall be equipped with a self-leveling feature that will automatically bring and maintain the car at floor landings within a tolerance of ½ inch (13 mm) under rated loading to zero loading conditions.

***11B*-407.4.5 Illumination.** The level of illumination at the car controls, platform, car threshold and car landing sill shall be 5 foot candles (54 lux) minimum.

***11B*-407.4.6 Elevator Car Controls.** Where provided, elevator car controls shall comply with *11B*-407.4.6 and *11B*-309.4.

EXCEPTION: In existing elevators, where a new car operating panel complying with *11B*-407.4.6 is provided, existing car operating panels shall not be required to comply with *11B*-407.4.6.

***11B*-407.4.6.1 Location.** Controls shall be located within one of the reach ranges specified in *11B*-308.

EXCEPTIONS: 1. Where the elevator panel serves more than 16 openings and a parallel approach is provided, buttons with floor designations shall be permitted to be 54 inches (1372 mm) maximum above the finish floor.
2. In existing elevators, car control buttons with floor designations shall be permitted to be located 54 inches (1372 mm) maximum above the finish floor where a parallel approach is provided.

***11B*-407.4.6.2 Buttons.** Car control buttons with floor designations shall comply with *11B*-407.4.6.2 ~~and shall be raised or flush.~~

EXCEPTION: In existing elevators, buttons shall be permitted to be recessed *or flush*.

***11B*-407.4.6.2.1 Size *and Shape*.** Buttons shall *have square shoulders,* be 3/4 inch (19 mm) minimum in their smallest dimension *and be raised a minimum 1/8 inch (3.2 mm) plus or minus 1/32 inch (0.8 mm) above the surrounding surface*.

***11B*-407.4.6.2.2 Arrangement.** Buttons shall be arranged with numbers in ascending order. When two or more columns of buttons are provided they shall read from left to right.

***11B-407.4.6.2.3 Illumination.** Car control buttons shall be illuminated, shall have square shoulders, and shall be activated by a mechanical motion that is detectable.*

***11B*-407.4.6.2.4 Operation.** *Car control buttons shall be activated by a mechanical motion that is detectable.*

***11B*-407.4.6.3 Keypads.** Car control keypads shall be in a standard telephone keypad arrangement and shall comply with *11B*-407.4.7.2.

***11B*-407.4.6.4 Emergency Controls.** Emergency controls shall comply with *11B*-407.4.6.4.

***11B*-407.4.6.4.1 Height.** Emergency control buttons shall have their centerlines 35 inches (889 mm) minimum above the finish floor.

***11B*-407.4.6.4.2 Location.** Emergency controls, including the emergency alarm, shall be grouped at the bottom of the panel.

***11B*-407.4.7 Designations and Indicators of Car Controls.** Designations and indicators of car controls shall comply with *11B*-407.4.7.

EXCEPTION: In existing elevators, where a new car operating panel complying with *11B*-407.4.7 is provided, existing car operating panels shall not be required to comply with *11B*-407.4.7.

***11B*-407.4.7.1 Buttons.** Car control buttons shall comply with *11B*-407.4.7.1.

***11B*-407.4.7.1.1 Type.** Control buttons shall be identified by tactile characters complying with *11B*-703.2.

***11B*-407.4.7.1.2 Location.** Raised character and braille designations shall be placed immediately to the left of the control button to which the designations apply.

EXCEPTION: Where space on an existing car operating panel precludes tactile markings to the left of the controls, markings shall be placed as near to the control as possible.

***11B*-407.4.7.1.3 Symbols.** The control button for the emergency stop, alarm, door open, door close, main entry floor, and phone, shall be identified with tactile symbols as shown in Table *11B*-407.4.7.1.3.

Table *11B*-407.4.7.1.3 Elevator Control Button Identification

Control Button	Tactile Symbol	Braille Message
Emergency Stop		"ST"OP Three cells
Alarm		AL"AR"M Four cells
Door Open		OP"EN" Three cells
Door Close		CLOSE Five cells
Main Entry Floor		MA"IN" Three cells
Phone		PH"ONE" Four cells

***11B*-407.4.7.1.4 Visible Indicators.** Buttons with floor designations shall be provided with visible indicators to show that a call has been registered. The visible indication shall extinguish when the car arrives at the designated floor.

***11B*-407.4.7.2 Keypads.** Keypads shall be identified by characters complying with *11B*-703.5 and shall be centered on the corresponding keypad button. The number five key shall have a single raised dot. The dot shall be 0.118 inch (3 mm) to 0.120 inch (3.05 mm) base diameter and in other aspects comply with Table *11B*-703.3.1.

***11B*-407.4.8 Car Position Indicators.** Audible and visible car position indicators shall be provided in elevator cars.

***11B*-407.4.8.1 Visible Indicators.** Visible indicators shall comply with *11B*-407.4.8.1.

***11B*-407.4.8.1.1 Size.** Characters shall be ½ inch (13 mm) high minimum.

***11B*-407.4.8.1.2 Location.** Indicators shall be located above the car control panel or above the door.

***11B*-407.4.8.1.3 Floor Arrival.** As the car passes a floor and when a car stops at a floor served by the elevator, the corresponding character shall illuminate.

EXCEPTION: Destination-oriented elevators shall not be required to comply with *11B*-407.4.8.1.3 provided that the visible indicators extinguish when the call has been answered.

***11B*-407.4.8.1.4 Destination Indicator.** In destination-oriented elevators, a display shall be provided in the car with visible indicators to show car destinations.

***11B*-407.4.8.2 Audible Indicators.** Audible indicators shall comply with *11B*-407.4.8.2.

***11B*-407.4.8.2.1 Signal Type.** The signal shall be an automatic verbal annunciator which announces the floor at which the car is about to stop.

EXCEPTION: For elevators other than destination-oriented elevators that have a rated speed of 200 feet per minute (1 m/s) or less, a non-verbal audible signal with a frequency of 1500 Hz maximum which sounds as the car passes or is about to stop at a floor served by the elevator shall be permitted.

***11B*-407.4.8.2.2 Signal Level.** The verbal annunciator shall be 10 dB minimum above ambient, but shall not exceed 80 dB, measured at the annunciator.

***11B*-407.4.8.2.3 Frequency.** The verbal annunciator shall have a frequency of 300 Hz minimum to 3000 Hz maximum.

***11B*-407.4.9 Emergency Communication.** Emergency two-way communication systems shall comply with *11B*-308. Tactile symbols and characters shall be provided adjacent to the device and shall comply with *11B*-703.2. *Emergency two-way communication systems between the elevator and a point outside the hoistway shall comply with ASME A17.1* ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~.

***11B-407.4.10 Support Rail.** Support rails shall be provided on one wall of the car.*

***11B-407.4.10.1 Location.** Clearance between support rail and adjacent surfaces shall be 1 ½ inches (38 mm) minimum. Top of support rails shall be 31 inches (787 mm) to 33 inches (838 mm) vertically from the floor of the car.*

***11B-407.4.10.2 Surfaces.** Support rails shall be smooth and any surface adjacent to them shall be free of sharp or abrasive elements.*

***11B*-408 Limited-Use/Limited-Application Elevators**

***11B*-408.1 General.** Limited-use/limited-application elevators shall comply with *11B*-408 and with ASME A17.1 ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~. They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

***11B*-408.2 Elevator Landings.** Landings serving limited-use/limited-application elevators shall comply with *11B*-408.2.

***11B*-408.2.1 Call Buttons.** Elevator call buttons and keypads shall comply with *11B*-407.2.1.

***11B*-408.2.2 Hall Signals.** Hall signals shall comply with *11B*-407.2.2.

***11B*-408.2.3 Hoistway Signs.** Signs at elevator hoistways shall comply with *11B*-407.2.3.1.

***11B*-408.3 Elevator Doors.** Elevator hoistway doors shall comply with *11B*-408.3.

***11B*-408.3.1 Sliding Doors.** Sliding hoistway and car doors shall comply with *11B*-407.3.1 through *11B*-407.3.3 and *11B*-408.4.1.

***11B*-408.3.2 Swinging Doors.** Swinging hoistway doors shall open and close automatically and shall comply with *11B*-404, *11B*-407.3.2 and *11B*-408.3.2.

***11B*-408.3.2.1 Power Operation.** Swinging doors shall be power-operated and shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~.

***11B*-408.3.2.2 Duration.** Power-operated swinging doors shall remain open for 20 seconds minimum when activated.

***11B*-408.4 Elevator Cars.** Elevator cars shall comply with *11B*-408.4.

***11B*-408.4.1 Car Dimensions and Doors.** Elevator cars shall provide a clear width 42 inches (1067 mm) minimum and a clear depth 54 inches (1372 mm) minimum. Car doors shall be positioned at the narrow ends of cars and shall provide 32 inches (813 mm) minimum clear width.

EXCEPTIONS: 1. Cars that provide a clear width 51 inches (1295 mm) minimum shall be permitted to provide a clear depth 51 inches (1295 mm) minimum provided that car doors provide a clear opening 36 inches (914 mm) wide minimum.
2. Existing elevator cars shall be permitted to provide a clear width 36 inches (914 mm) minimum, clear depth 54 inches (1372 mm) minimum, and a net clear platform area 15 square feet (1.4 m^2) minimum.

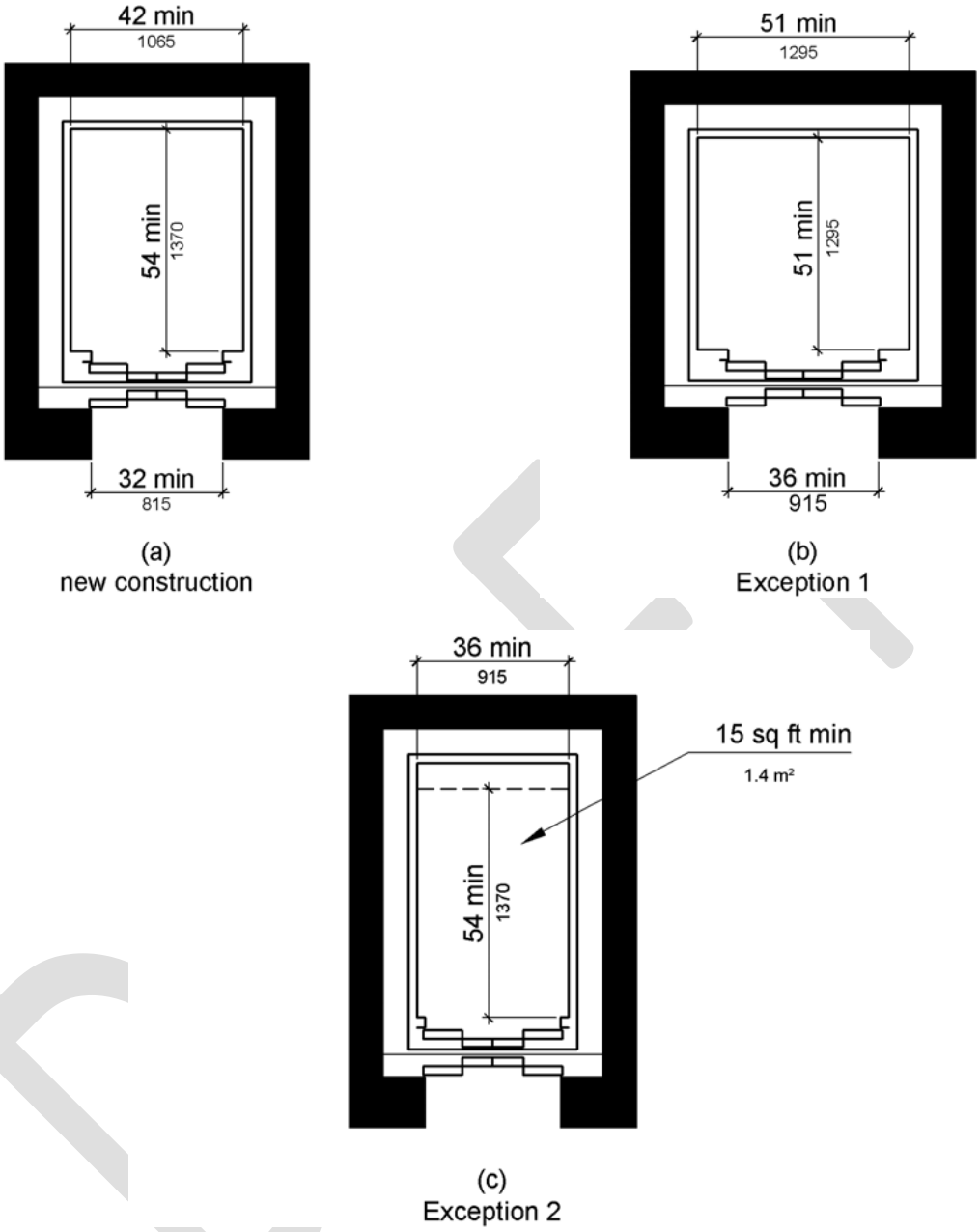


Figure *11B*-408.4.1
Limited-Use/Limited-Application (LULA) Elevator Car Dimensions

***11B*-408.4.2 Floor Surfaces.** Floor surfaces in elevator cars shall comply with *11B*-302 and *11B*-303.

***11B*-408.4.3 Platform to Hoistway Clearance.** The platform to hoistway clearance shall comply with *11B*-407.4.3.

***11B*-408.4.4 Leveling.** Elevator car leveling shall comply with *11B*-407.4.4.

***11B*-408.4.5 Illumination.** Elevator car illumination shall comply with *11B*-407.4.5.

***11B*-408.4.6 Car Controls.** Elevator car controls shall comply with *11B*-407.4.6. Control panels shall be centered on a side wall.

***11B*-408.4.7 Designations and Indicators of Car Controls.** Designations and indicators of car controls shall comply with *11B*-407.4.7.

***11B*-408.4.8 Emergency Communications.** Car emergency signaling devices complying with *11B*-407.4.9 shall be provided.

11B-409 Private Residence Elevators

***11B*-409.1 General.** Private residence elevators that are provided within a residential dwelling unit required to provide mobility features complying with 809.2 through 809.4 shall comply with 409 and with ASME A17.1 ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~. They shall be passenger elevators as classified by ASME A17.1. Elevator operation shall be automatic.

***11B*-409.2 Call Buttons.** Call buttons shall be ¾ inch (19 mm) minimum in the smallest dimension and shall comply with *11B*-309.

***11B*-409.3 Elevator Doors.** Hoistway doors, car doors, and car gates shall comply with *11B*-409.3 and *11B*-404.

EXCEPTION: Doors shall not be required to comply with the maneuvering clearance requirements in *11B*-404.2.4.1 for approaches to the push side of swinging doors.

***11B*-409.3.1 Power Operation.** Elevator car and hoistway doors and gates shall be power operated and shall comply with ANSI/BHMA A156.19 (1997 or 2002 edition) ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~. Power operated doors and gates shall remain open for 20 seconds minimum when activated.

EXCEPTION: In elevator cars with more than one opening, hoistway doors and gates shall be permitted to be of the manual-open, self-close type.

***11B*-409.3.2 Location.** Elevator car doors or gates shall be positioned at the narrow end of the clear floor spaces required by *11B*-409.4.1.

***11B*-409.4 Elevator Cars.** Private residence elevator cars shall comply with *11B*-409.4.

***11B*-409.4.1 Inside Dimensions of Elevator Cars.** Elevator cars shall provide a clear floor space of 36 inches (914 mm) minimum by 48 inches (1219 mm) minimum and shall comply with *11B*-305.

***11B*-409.4.2 Floor Surfaces.** Floor surfaces in elevator cars shall comply with *11B*-302 and *11B*-303.

***11B*-409.4.3 Platform to Hoistway Clearance.** The clearance between the car platform and the edge of any landing sill shall be 1½ inch (38 mm) maximum.

***11B*-409.4.4 Leveling.** Each car shall automatically stop at a floor landing within a tolerance of ½ inch (13 mm) under rated loading to zero loading conditions.

***11B*-409.4.5 Illumination Levels.** Elevator car illumination shall comply with *11B*-407.4.5.

***11B*-409.4.6 Car Controls.** Elevator car control buttons shall comply with *11B*-409.4.6, *11B*-309.3, *11B*-309.4, and shall be raised or flush.

***11B*-409.4.6.1 Size.** Control buttons shall be 3/4 inch (19 mm) minimum in their smallest dimension.

***11B*-409.4.6.2 Location.** Control panels shall be on a side wall, 12 inches (305 mm) minimum from any adjacent wall.

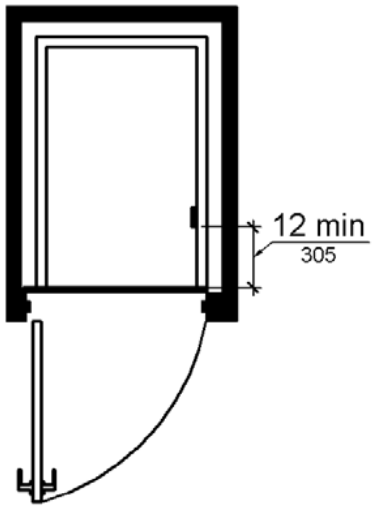


Figure *11B*-409.4.6.2
Location of Private Residence Elevator Control Panel

***11B*-409.4.7 Emergency Communications.** Emergency two-way communication systems shall comply with *11B*-409.4.7.

***11B*-409.4.7.1 Type.** A telephone and emergency signal device shall be provided in the car.

***11B*-409.4.7.2 Operable Parts.** The telephone and emergency signaling device shall comply with *11B*-309.3 and *11B*-309.4.

***11B*-409.4.7.3 Compartment.** If the telephone or device is in a closed compartment, the compartment door hardware shall comply with *11B*-309.

***11B*-409.4.7.4 Cord.** The telephone cord shall be 29 inches (737 mm) long minimum.

11B-410 Platform Lifts

***11B*-410.1 General.** Platform lifts shall comply with ASME A18.1 (1999 edition or 2003 edition) ~~(incorporated by reference, see "Referenced Standards" in Chapter 1)~~. Platform lifts shall not be attendant-operated and shall provide unassisted entry and exit from the lift.

***11B*-410.2 Floor Surfaces.** Floor surfaces in platform lifts shall comply with *11B*-302 and *11B*-303.

***11B*-410.3 Clear Floor Space.** Clear floor space in platform lifts shall comply with *11B*-305.

***11B*-410.4 Platform to Runway Clearance.** The clearance between the platform sill and the edge of any runway landing shall be 1¼ inch (32 mm) maximum.

***11B*-410.5 Operable Parts.** Controls for platform lifts shall comply with *11B*-309.

***11B*-410.6 Doors and Gates.** Platform lifts shall have low-energy power-operated doors or gates complying with *11B*-404.3. Doors shall remain open for 20 seconds minimum. End doors and gates shall provide a clear width 32 inches (813 mm) minimum. Side doors and gates shall provide a clear width 42 inches (1067 mm) minimum.

EXCEPTION: Platform lifts serving two landings maximum and having doors or gates on opposite sides shall be permitted to have self-closing manual doors or gates.

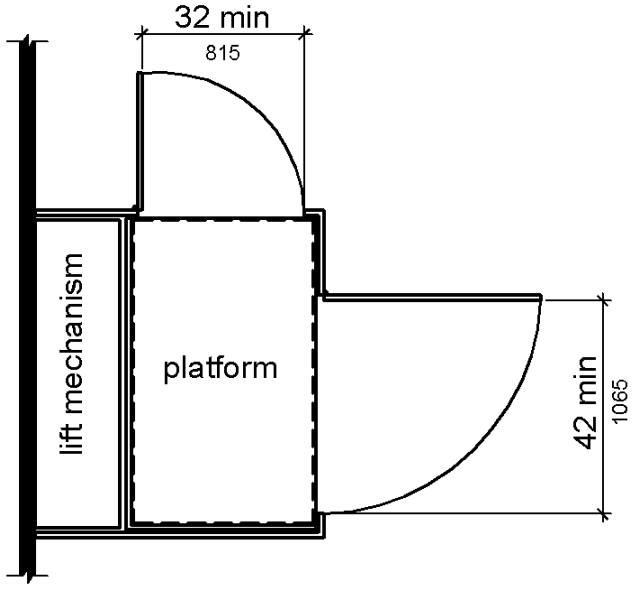


Figure *11B*-410.6
Platform Lift Doors and Gates

11B-410.7 Landing Size. *The minimum size of landings at platform lifts shall be 60 inches by 60 inches (1524 mm by 1524 mm).*

11B-410.8 Restriction Sign. *A sign complying with 11B-703 shall be posted in a conspicuous place at each landing and on the platform stating "No Freight" and include the International Symbol of Accessibility.*