2010 ADA Standards for Accessible Design for Public Accommodations and Commercial Facilities: Title III

CHAPTER 3: BUILDING BLOCKS (CONT.)

301 General
301.1 Scope. The provisions of Chapter 3 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

302 Floor or Ground Surfaces
302.1 General. Floor and ground surfaces shall be stable, firm, and slip resistant and shall comply with 302.
EXCEPTIONS:
1. Within animal containment areas, floor and ground surfaces shall not be required to be stable, firm, and slip resistant.
2. Areas of sport activity shall not be required to comply with 302.

302.2 Carpet. Carpet or carpet tile shall be securely attached and shall have a firm cushion, pad, or backing or no cushion or pad. Carpet or carpet tile shall have a level loop, textured loop, level cut pile, or level cut/uncut pile texture. Pile height shall be 1/2 inch (13 mm) maximum. Exposed edges of carpet shall be fastened to floor surfaces and shall have trim on the entire length of the exposed edge. Carpet edge trim shall comply with 303.

302.3 Openings. Openings in floor or ground surfaces shall not allow passage of a sphere more than 1/2 inch (13 mm) diameter except as allowed in 407.4.3, 409.4.3, 410.4, 810.5.3 and 810.10. Elongated openings shall be placed so that the long dimension is perpendicular to the dominant direction of travel.

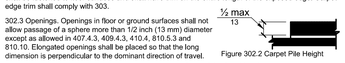


Figure 302.2 Carpet Pile Height

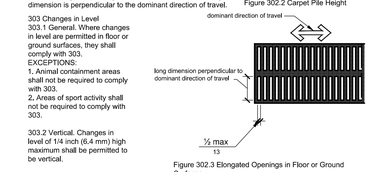


Figure 302.3 Elongated Openings in Floor or Ground Surfaces

303 Changes in Level
303.1 General. Where changes in level are permitted in floor or ground surfaces, they shall comply with 303.
EXCEPTIONS:
1. Animal containment areas shall not be required to comply with 303.
2. Areas of sport activity shall not be required to comply with 303.

303.2 Vertical. Changes in level of 1/4 inch (6.4 mm) high maximum shall be permitted to be vertical.

303.3 Beveled. Changes in level between 1/4 inch (6.4 mm) high minimum and 1/2 inch (13 mm) high maximum shall be beveled with a slope not steeper than 1:2.

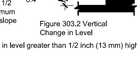


Figure 303.2 Vertical Change in Level

Figure 303.3 Beveled Change in Level

303.4 Ramps. Changes in level greater than 1/2 inch (13 mm) high shall be ramped, and shall comply with 405 or 406.

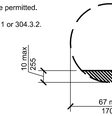
304 Turning Space
304.1 General. Turning space shall comply with 304.

304.2 Floor or Ground Surfaces. Floor or ground surfaces of a turning space shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

304.3 Size. Turning space shall comply with 304.3.1 or 304.3.2.

304.3.1 Circular space.

304.3.1.1 New buildings and facilities. In new buildings and facilities, the turning space shall be a circular space with a 67-inch (1700 mm) minimum diameter.

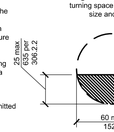


Overlap of knee to toe

Figure 304.3.1.1 Circular turning space - New building size and overlap

304.3.1.2 Overlap. Turning spaces shall be permitted to include knee and toe clearances under an obstruction, the overlap shall comply with all of the following:
1. The depth of the overlap shall not be more than 10 inches (255 mm), and
2. The depth shall not exceed the depth of the knee and toe clearances provided, and
3. The overlap shall be permitted only within the turning circle area shown shaded in Figure 304.3.1.

304.3.1.2 Existing buildings and facilities. In existing buildings and facilities, the turning space shall be a circular space with 60-inch (1525 mm) minimum diameter.



Overlap of knee to toe clearance

Figure 304.3.1.2 Circular turning space - Existing buildings - Size and overlap

304.3.2 T-Shaped Space

304.3.2.1 New Buildings and Facilities
In new buildings and facilities, the turning space shall be a T-shaped space complying with one of the following:

1. A T-shaped space, clear of obstruction, that fits within an area 68 inches (1725 mm) wide and 60 inches (1525 mm) deep, with two arms and one base that are all 36 inches (915 mm) minimum in width. Each arm shall extend 16 inches (405 mm) minimum from each side of the base located opposite the other, and the base shall extend 24 inches (610 mm) minimum from the arms. At the intersection of each arm and the base, the interior corners shall be chamfered for 8 inches (205 mm) minimum along both the arm and along the base.

2. A T-shaped space, clear of obstruction, that fits within an area 64 inches (1625 mm) wide and 60 inches (1525 mm) deep, with two arms 38 inches (965 mm) minimum in width and a base 42 inches (1065 mm) minimum in width. Each arm shall extend 11 inches (280 mm) minimum from each side of the base, located opposite the other, and the base shall extend 22 inches (560 mm) minimum from each arm.

3. A T-shaped space, clear of obstruction, 64 inches (1625 mm) wide and 60 inches (1525 mm) deep, with two arms and one base 40 inches (1015 mm) minimum in width. Each arm shall extend 12 inches (305 mm) minimum from each side of the base and the base shall extend 20 inches (510 mm) minimum from each arm.

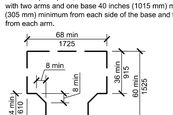


Figure 304.3.2.1(A) T-Shaped Turning Space new buildings - Option 1

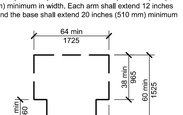


Figure 304.3.2.1(B) T-Shaped Turning Space new buildings - Option 2

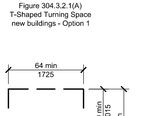
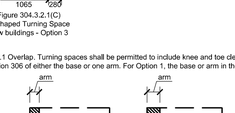


Figure 304.3.2.1(C) T-Shaped Turning Space new buildings - Option 3

304.3.2.1.1 Overlap. Turning spaces shall be permitted to include knee and toe clearance complying with Section 306 of either the base or one arm. For Option 1, the base or arm in the portion beyond the chamfer.



Overlap of knee to toe clearance

Figure 304.3.2.1.1 T-Shaped Turning Space new buildings - overlap

304.3.2.2 Existing buildings and facilities. In existing buildings and facilities, the turning space shall be a T-shaped space within 60-inches (1525 mm) minimum square, with arms and base 36 inches (915 mm) minimum in width. Each arm of the T shall be clear of obstructions 12 inches (305 mm) minimum in each direction, and the base shall be clear of obstructions 24 inches (610 mm) minimum.

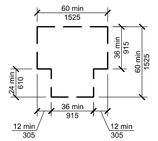


Figure 304.3.2.2 T-Shaped turning space new building - size and overlap

304.3.2.2.1 Overlap. Turning spaces shall be permitted to include knee and toe clearance complying with Section 306 only at the end of either the base or one arm.

304.4 Door Swing. Doors shall be permitted to swing into turning spaces.

305 Clear Floor or Ground Space
305.1 General. Clear floor or ground space shall comply with 305.

305.2 Floor or Ground Surfaces. Floor or ground surfaces of a clear floor or ground space shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

305.3 Size. The clear floor or ground space shall be 30 inches (760 mm) minimum by 48 inches (1220 mm) minimum.

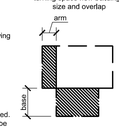


Figure 304.3.2 T-Shaped Turning Space

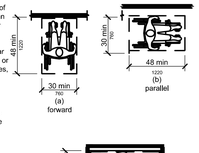
305.4 Knee and Toe Clearance. Unless otherwise specified, clear floor or ground space shall be permitted to include knee and toe clearance complying with 306.

305.5 Position. Unless otherwise specified, clear floor or ground space shall be positioned for either forward or parallel approach to an element.

305.6 Approach. One full unobstructed side of the clear floor or ground space shall adjoin an accessible route or adjoin another clear floor or ground space.

305.7 Maneuvering Clearance. Where a clear floor or ground space is located in an alcove or otherwise confined on all or part of three sides, additional maneuvering clearance shall be provided in accordance with 305.7.1 and 305.7.2.

Figure 305.3 Clear Floor or Ground Space



(a) forward
(b) parallel
Figure 305.7.1 Maneuvering Clearance in an Alcove, Forward Approach

305.7.1 Forward Approach. Alcoves shall be 36 inches (915 mm)wide minimum where the depth exceeds 24 inches (610 mm).

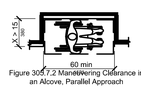


Figure 305.7.2 Maneuvering Clearance in an Alcove, Parallel Approach

306 Knee and Toe Clearance
306.1 General. Where space beneath an element is included as part of clear floor or ground space or turning space, the space shall comply with 306. Additional space shall not be prohibited beneath an element but shall not be considered as part of the clear floor or ground space or turning space.

306.2 Toe Clearance.
306.2.1 General. Space under an element between the finish floor or ground and 9 inches (230 mm) above the finish floor or ground shall be considered toe clearance and shall comply with 306.2.

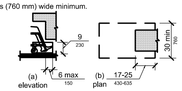
306.2.2 Maximum Depth. Toe clearance shall extend 25 inches (635 mm) maximum under an element.

306.2.3 Minimum Required Depth. Where toe clearance is required at an element as part of a clear floor space, the toe clearance shall extend 17 inches (430 mm) minimum under the element.

306.2.4 Additional Clearance. Space extending greater than 6 inches (150 mm) beyond the available knee clearance at 9 inches (230 mm) above the finish floor or ground shall not be considered toe clearance.

306.2.5 Width. Toe clearance shall be 30 inches (760 mm) wide minimum.

306.3 Knee Clearance.
306.3.1 General. Space under an element between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground shall be considered knee clearance and shall comply with 306.3.



(a) elevation
(b) plan
Figure 305.5 Position of Clear Floor or Ground Space
Figure 306.2 Toe Clearance

306.3.2 Maximum Depth. Knee clearance shall extend 25 inches (635 mm) maximum under an element at 9 inches (230 mm) above the finish floor or ground.

305.7.2 Parallel Approach. Alcoves shall be 60 inches (1525 mm) wide minimum where the depth exceeds 15 inches (380 mm).

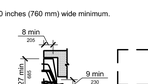
306.3.3 Minimum Required Depth. Where knee clearance is required under an element as part of a clear floor space, the knee clearance shall be 11 inches (280 mm) deep minimum at 9 inches (230 mm) above the finish floor or ground, and 8 inches (205 mm) deep minimum at 27 inches (685 mm) above the finish floor or ground.

306.3.4 Clearance Reduction. Between 9 inches (230 mm) and 27 inches (685 mm) above the finish floor or ground, the knee clearance shall be permitted to reduce at a rate of 1 inch (25 mm) in depth for each 6 inches (150 mm) in height.

306.3.5 Width. Knee clearance shall be 30 inches (760 mm) wide minimum.

307 Protruding Objects
307.1 General. Protruding objects shall comply with 307.

307.2 Protrusion Limits. Objects with leading edges more than 27 inches (685 mm) and not more than 80 inches (2030 mm) above the finish floor or ground shall protrude 4 inches (100 mm) maximum horizontally into the circulation path.
EXCEPTION: Handrails shall be permitted to protrude 4 1/2 inches (115 mm) maximum.



(a) elevation
(b) plan
Figure 306.3 Knee Clearance

307.3 Post-Mounted Objects. Free-standing objects mounted on posts or pylons shall overhang circulation paths 12 inches (305 mm) maximum when located 27 inches (685 mm) minimum and 80 inches (2030 mm) maximum above the finish floor or ground. Where a sign or other obstruction is mounted between posts or pylons and the clear distance between the posts or pylons is greater than 12 inches (305 mm), the lowest edge of such sign or obstruction shall be 27 inches (685 mm) maximum or 80 inches (2030 mm) minimum above the finish floor or ground.
EXCEPTION: The sloping portions of handrails serving stairs and ramps shall not be required to comply with 307.3.

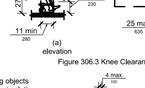
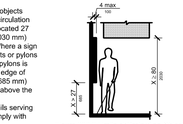


Figure 307.2 Limits of Protruding Objects

307.4 Vertical Clearance. Vertical clearance shall be 80 inches (2030 mm) high minimum. Guardrails or other barriers shall be provided where the vertical clearance is less than 80 inches (2030 mm) high. The leading edge of such guardrail or barrier shall be located 27 inches (685 mm) maximum above the finish floor or ground.
EXCEPTION: Door closers and door stops shall be permitted to be 78 inches (1980 mm) minimum above the finish floor or ground.



(a)
(b)
Figure 307.3 Post-Mounted Protruding Objects

307.5 Required Clear Width. Protruding objects shall not reduce the clear width required for accessible routes.

308 Reach Ranges
308.1 General. Reach ranges shall comply with 308.

308.2 Forward Reach.

308.2.1 Unobstructed. Where a forward reach is unobstructed, the high forward reach shall be 48 inches (1220 mm) maximum and the low forward reach shall be 15 inches (380 mm) minimum above the finish floor or ground.

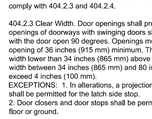
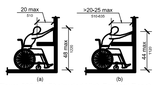


Figure 308.1 Unobstructed Forward Reach



(a)
(b)
Figure 308.2.2 Obstructed High Forward Reach

308.2.2 Obstructed High Reach. Where a high forward reach is over an obstruction, the clear floor space shall extend beneath the element for a distance not less than the required reach depth over the obstruction. The high forward reach shall be 48 inches (1220 mm) maximum where the reach depth is 20 inches (510 mm) maximum. Where the reach depth exceeds 20 inches (510 mm), the high forward reach shall be 44 inches (1120 mm) maximum and the reach depth shall be 25 inches (635 mm) maximum.

308.3 Side Reach.
308.3.1 Unobstructed. Where a clear floor or ground space allows a parallel approach to an element and the side reach is unobstructed, the high side reach shall be 48 inches (1220 mm) maximum and the low side reach shall be 15 inches (380 mm) minimum above the finish floor or ground.
EXCEPTIONS:
1. An obstruction shall be permitted between the clear floor or ground space and the element where the depth of the obstruction is 10 inches (255 mm) maximum.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

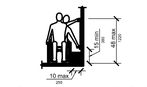
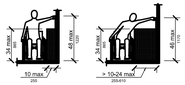


Figure 308.3.1 Unobstructed Side Reach



(a)
(b)
Figure 308.3.2 Obstructed High Side Reach

308.3.2 Obstructed High Reach. Where a clear floor or ground space allows a parallel approach to an element and the high side reach is over an obstruction, the height of the obstruction shall be 34 inches (865 mm) maximum and the depth of the obstruction shall be 24 inches (610 mm) maximum. The high side reach shall be 48 inches (1220 mm) maximum for a reach depth of 10 inches (255 mm) maximum. Where the reach depth exceeds 10 inches (255 mm), the high side reach shall be 46 inches (1170 mm) maximum for a reach depth of 24 inches (610 mm) maximum.

308.3.2 EXCEPTIONS:
1. The top of washing machines and clothes dryers shall be permitted to be 36 inches (915 mm) maximum above the finish floor.
2. Operable parts of fuel dispensers shall be permitted to be 54 inches (1370 mm) maximum measured from the surface of the vehicular way where fuel dispensers are installed on existing curbs.

309 Operable Parts
309.1 General. Operable parts shall comply with 309.

309.2 Clear Floor Space. A clear floor or ground space complying with 305 shall be provided.

309.3 Height. Operable parts shall be placed within one or more of the reach ranges specified in 308.

309.4 Operation. Operable parts shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist. The force required to activate operable parts shall be 5 pounds (22.2 N) maximum.
EXCEPTION: Gas pump nozzles shall not be required to provide operable parts that have an activating force of 5 pounds (22.2 N) maximum.

CHAPTER 4: ACCESSIBLE ROUTES

401 General
401.1 Scope. The provisions of Chapter 4 shall apply where required by Chapter 2 or where referenced by a requirement in this document.

402 Accessible Routes
402.1 General. Accessible routes shall comply with 402.

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 4.

403 Walking Surfaces
403.1 General. Walking surfaces that are a part of an accessible route shall comply with 403.

403.2 Floor or Ground Surface. Floor or ground surfaces shall comply with 302.
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.
403.4 Changes in Level. Changes in level shall comply with 303.

403.5 Clearances. Walking surfaces shall provide clearances complying with 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.

403.5.1 Clear Width. Except as provided in 403.5.2 and 403.5.3, the clear width of walking surfaces shall be 36 inches (915 mm) minimum.
EXCEPTION: The clear width shall be permitted to be reduced to 32 inches (815 mm) minimum for a length of 24 inches (610 mm) maximum provided that reduced width segments are separated by segments that are 48 inches (1220 mm) long minimum and 36 inches (915 mm) wide minimum.

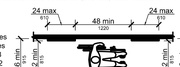
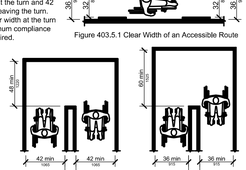


Figure 403.5.1 Clear Width of an Accessible Route

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 (1220 mm) wide, clear width shall be 42 inches (1065 mm) minimum approaching the turn, 48 inches (1220 mm) minimum at the turn and 42 inches (1065 mm) minimum leaving the turn.
EXCEPTION: Where the clear width at the turn is 60 inches (1525 mm) minimum compliance with 403.5.2 shall not be required.

403.5.3 Passing Spaces. An accessible route with a clear width less than 60 inches (1525 mm) shall provide passing spaces at intervals of 200 feet (61 m) maximum. Passing spaces shall be either: a space 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum; or, an intersection of two walking surfaces providing a T-shaped space complying with 304.3.2 where the base and arms of the T-shaped space extend 48 inches (1220 mm) minimum beyond the intersection.



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

404 Doors, Doorways, and Gates
404.1 General. Doors, doorways, and gates that are part of an accessible route shall comply with 404.
EXCEPTION: Doors, doorways, and gates designed to be operated only by security personnel shall not be required to comply with 404.2.7, 404.2.8, 404.2.9, 404.3.2 and 404.3.4 through 404.3.7.

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

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

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

404.2.3 Clear Width. Door openings shall provide a clear width of 32 inches (815 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 (915 mm) minimum. There shall be no projections into the required clear opening width lower than 34 inches (865 mm) above the finish floor or ground. Projections into the clear opening width between 34 inches (865 mm) and 80 inches (2030 mm) above the finish floor or ground shall not exceed 4 inches (100 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 (1980 mm) minimum above the finish floor or ground.

404.2.4 Maneuvering Clearances. Minimum maneuvering clearances at doors and gates shall comply with 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.
404.2.4.1 Swinging Doors and Gates. Swinging doors and gates shall have maneuvering clearances complying with Table 404.2.4.1. (as illustrated on Figures 404.2.4.1)

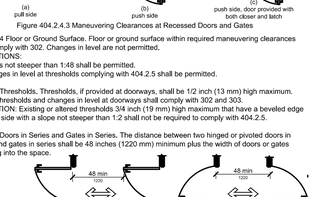


Figure 404.2.4.3 Maneuvering Clearances at Recessed Doors and Gates

404.2.4.4 Floor or Ground Surface. Floor or ground surface within required maneuvering clearances shall comply with 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 404.2.5 shall be permitted.

404.2.5 Thresholds. Thresholds, if provided at doorways, shall be 1/2 inch (13 mm) high maximum. Raised thresholds and changes in level at doorways shall comply with 302 and 303.
EXCEPTION: Existing or altered thresholds 3/4 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 404.2.5.

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 (1220 mm) minimum plus the width of doors or gates swinging into the space.

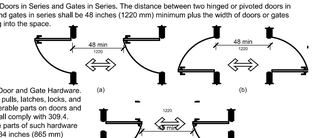


Figure 404.2.6 Doors in Series and Gates in Series

404.2.7 Door and Gate Hardware. Handles, pulls, latches, locks, and other operable parts on doors and gates shall comply with 309.4. Operable parts of such hardware shall be 34 inches (865 mm) minimum and 48 inches (1220 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 (1370 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.

404.2.8 Closing Speed. Door and gate closing speed shall comply with 404.2.8.

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.

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.

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.
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.

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 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 (255 mm) bottom smooth surface height requirement.

3. Doors and gates that do not extend to within 10 inches (255 mm) of the finish floor or ground shall not be required to comply with 404.2.10.
4. Existing doors and gates without smooth surfaces within 10 inches (255 mm) of the finish floor or ground shall not be required to provide smooth surfaces complying with 404.2.10 provided that if added kick plates are installed, cavities created by such kick plates shall be capped

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 (1090 mm) maximum above the finish floor.
EXCEPTION: Vision lights with the lowest part more than 66 inches (1675 mm) from the finish floor or ground shall not be required to comply with 404.2.11.

404.3 Automatic and Power-Assisted Doors and Gates. Automatic doors and automatic gates shall comply with 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).

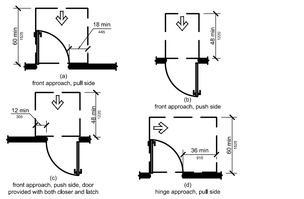


Figure 404.2.4.1 Maneuvering Clearances at Manual Swinging Doors and Gates

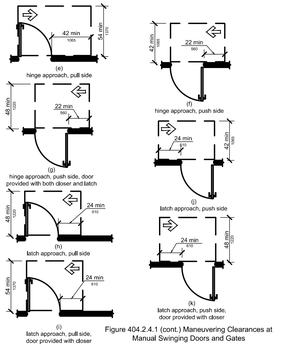


Figure 404.2.4.1 (cont.) Maneuvering Clearances at Manual Swinging Doors and Gates

404.2.4.2 Doorways without Doors or Gates, Sliding Doors, and Folding Doors. Doorways less than 36 inches (915 mm) wide without doors or gates, sliding doors, or folding doors shall have maneuvering clearances complying with Table 404.2.4.2. (as illustrated on Figure 404.2.4.2)

404.2.4.3 Recessed Doors and Gates. Maneuvering clearances for forward approach shall be provided when any obstruction within 18 inches (455 mm) of the latch side of a doorway projects more than 8 inches (205 mm) beyond the face of the door, measured perpendicular to the face of the door or gate.

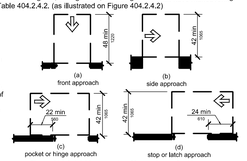


Figure 404.2.4.2 Maneuvering Clearances at Doorways without Doors, Sliding Doors, Gates, and Folding Doors

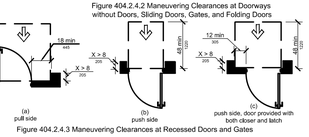


Figure 404.2.4.3 Maneuvering Clearances at Recessed Doors and Gates

Figure 403.5.1 Clear Width of an Accessible Route

Figure 404.2.6 Doors in Series and Gates in Series

404.3.1 Clear Width. Doorways shall provide a clear opening of 32 inches (815 mm) minimum in power-on and power-off mode. The minimum clear width for automatic door systems in a doorway shall be based on the clear opening provided by all leaves in the open position.

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

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

404.3.3 Thresholds. Thresholds and changes in level at doorways shall comply with 404.2.5.

404.3.4 Doors in Series and Gates in Series. Doors in series and gates in series shall comply with 404.2.6.

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

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 (815 mm) minimum when operated in emergency mode.

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

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

405 Ramps
405.1 General. Ramps on accessible routes shall comply with 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 405.

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 405.2 where such slopes are necessary due to space limitations.

Table 405.2 Maximum Ramp Slope and Rise for Existing Sites, Buildings, and Facilities		
Slope (A slope steeper than 1:8 is prohibited.)	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)

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

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

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) 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.

405.6 Rise. The rise for any ramp run shall be 30 inches (760 mm) maximum.

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

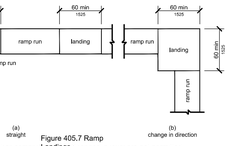


Figure 405.7 Ramp

405.7.1 Slope. Landings shall comply with 302. Changes in level are not permitted.
EXCEPTION: Slopes not steeper than 1:48 shall be permitted.

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

405.7.3 Length. The landing clear length shall be 60 inches (1525 mm) long minimum.

405.7.4 Change in Direction. Ramps that change direction between runs at landings shall have a clear landing 60 inches (1525 mm) minimum by 60 inches (1525 mm) minimum.

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

405.8 Handrails. Ramp runs with a rise greater than 6 inches (150 mm) shall have handrails complying with 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.

405.9 Edge Protection. Edge protection complying with 405.9.1 or 405.9.2 shall be provided on each side of ramp runs and at each side of ramp landings.
EXCEPTION1. Edge protection shall not be required on ramps that are not required to have handrails and have slopes complying with 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 vert