

Accessible Routes

ACCESSIBLE ROUTES & CLEARANCES

Accessible routes or paths of travel in new and existing projects are essential aspects of Accessible design. If you cannot even get to an area, no matter how accessible that portion is, it will still not be accessible. Not only is the route or path itself required to be accessible, but there are a variety of component requirements that make it accessible. This chapter will look at a broad view of these elements and their specific requirements.

General Notes

- A minimum of one accessible route within the site connects all site arrival points from the public right of way and public transportation stops, to accessible parking, accessible loading zones, accessible building elements and spaces on the site, and required building entrances
- If the only means of access is a vehicular way with no pedestrian access, then an accessible route is not required to connect the site arrival points with the building entries, but instead from the accessible parking and passenger drop-off areas to the building entries

Note Access aisles for accessible parking spaces are considered to be part of the accessible route

- The accessible route is located in the same general area and coincides with the circulation path, but does not include stairs or escalators [nor can it pass thru kitchens, restrooms, storage rooms, or closets, unless explicitly permitted by Chapter 10 of the CBC]
- Qualified historical buildings that are allowed exemptions for alterations are required to have one minimum accessible path of travel from the public right of way to the entry

Note: *Path of travel* is a concept that only applies to alterations and existing buildings. It not only includes

the area where pedestrians move—such as corridors, hallways, lobbies, sidewalks, ramps, parking access aisles, walkways, doorways, and elevators—but, by definition, it also includes the restrooms, phones, and drinking fountains. Generally a *path of travel* connects an exterior approach, to an entry, to an altered area. The required width and height meet the same requirements as *accessible routes*. The term *path of travel* is used when providing an approach to an altered area that is required to be upgraded using 20% of the construction costs for *proportional spending*. CFR § 36.403(e) and § 35.151(b)(4)(ii):

A *path of travel* includes a continuous, unobstructed way of pedestrian passage by means of which the altered area may be approached, entered, and exited, and which connects the altered area with an exterior approach (including sidewalks, streets, and parking areas), an entrance to the facility, and other parts of the facility.

An accessible *path of travel* may consist of walks and sidewalks, curb ramps, and other interior or exterior pedestrian ramps; clear floor paths through lobbies, corridors, rooms, and other improved areas; parking access aisles; elevators and lifts; or a combination of these elements.

For the purposes of this section, the concept of *path of travel* also includes the restrooms, telephones, and drinking fountains serving the altered area.

- A minimum of one accessible route within the building/facility connects all accessible entries with all accessible spaces and elements connected by a circulation path unless specifically exempted
- Both manual and powered revolving doors/gates/turnstiles are not part of an accessible route, although they can be considered part of a common use circulation path

| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | Items in blue are where California provides greater access | Outside of California ignore blue text and the blue [strikeout] line itself—everything in black pertains |

- In new construction with over 10,000 SF per floor where elevators are required, a vertical accessible route is provided within 200 LF of each stairway and escalator; in existing projects when new stairs or escalators are added (if not used only for emergency egress), a vertical accessible route is also provided per CBC
- Accessible routes are not required to connect ~~[mezzanines in one-story buildings, or]~~ levels and stories within places of public accommodation that are less than 3 stories or multi-story buildings with less than 3,000 SF per each floor, unless they are offices of health care providers or shopping centers/malls, with a few other exceptions [per CBC]

CBC NOTE

While the intent in the CBC is to always connect mezzanine levels with an accessible route, this is not how it is actually stated in the code

- Accessible routes connect required clear floor spaces at accessible elements—one full unobstructed side of the clear floor space adjoins the accessible route or overlaps the route where not prohibited
- Units in self-storage facilities that are not required to be accessible are not required to be located on an accessible route

Route Clearances

- Sidewalks and exterior walkways are a minimum of 36" clear ~~[only if restrictions exist caused by right-of-way, natural barriers, or other existing conditions causing an unreasonable hardship, otherwise it is 48" minimum clear per CBC]~~
- If the overhang of parked cars intrudes upon the minimum required clear width of sidewalks or walkways, then wheelstops, bollards, or some other means must be provided to prevent encroachment into the minimum required clear walkway width

NOTE

Bollards are considered a viable and appropriate alternative to stop a vehicle, whereas wheelstops can easily lead to trip and falls when there is no vehicle parked in the space, and cars can jump the wheelstop if going too fast

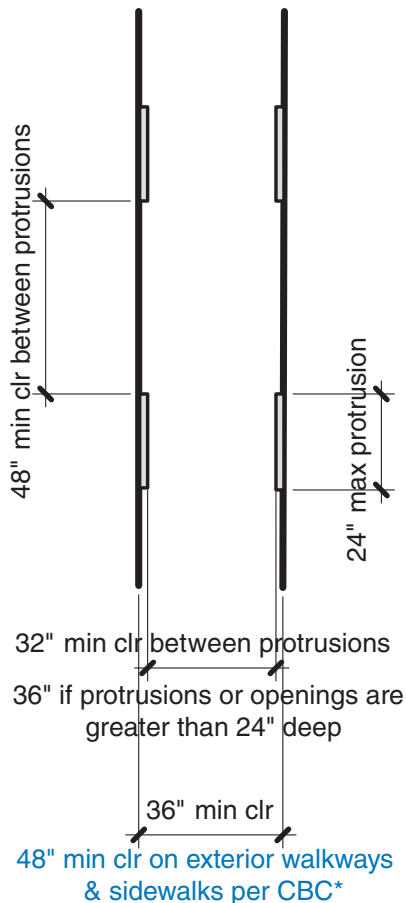
- The accessible route [preferably] does not go behind parking spaces, with the exception of the specific space the person is parked in [per CBC]
- Walking surfaces are 36" minimum clear [if it is an aisle serving 1 side (ie, check stand, employee work area, food service, fixed seating, tables, or counters) per CBC]
- Aisles serving 2 sides are 44" minimum clear per CBC
- Routes to the accessible toilet compartments in multi-user restrooms are 44" minimum clear except at doors per CBC
- Corridors are 44" minimum clear if serving 10 or more people and 36" minimum if serving less than 10 people per CBC
- Protrusions of 24" maximum in length parallel to the direction of travel can reduce the route from 36" minimum down to a 32" clear width if separated by a distance of at least 48" between each occurrence of the protrusion
- Protrusions more than 24" in length parallel to the direction of travel, as well as openings more than 24" in depth, are required to have a clear width of 36" minimum
- In multi-user restrooms, the area in front of the accessible toilet stall door is ~~[42" minimum clear for a latch approach]~~ [48" minimum clear for push side approach and 60" minimum clear for pull approach per CBC]
- Ambulatory compartments with latch side approach have a minimum clear route width of [42] [44" per CBC]

Note: *Accessible route* is a term used to describe a route taken by pedestrians that is accessible for people with limited mobility meeting specific requirements. With a few exceptions, the *accessible route* connects the accessible parking spaces and accessible passenger loading zones with the public right of way, and public transportation stops to the accessible building entrance and to accessible elements and spaces both on the site and within the building including each story and mezzanine. The term *path of travel* is generally used for existing projects and is also accessible.

If spaces and elements are connected by a *circulation path*, then for the most part they are also required to be connected by an *accessible route*, preferably in the same

vicinity. If spaces or elements are accessible, they are located on an *accessible route* and are to coincide or be in the same general area as *circulation paths*. *Accessible routes* are comprised of walking surfaces with a 5% maximum slope, doorways, pedestrian ramps, curb ramps excluding their flared sides, elevators, and lifts. Revolving doors, gates, and turnstiles are not part of an *accessible route*, although they are part of a *circulation path*. An *accessible route* is considered to be a volume of 80" minimum clear height. The minimum width is 36" per ADAS whereas in California it is 48" on the exterior, 44" on double-loaded and 36" on single-loaded interior routes. There are further width requirements for U-turns, doorways, and passing spaces. This required minimum clear width of an *accessible route* cannot be reduced by any protruding objects.

Accessible Route Clear Widths



* Exterior exit balconies are typically 44" minimum clear depending upon exiting requirements per CBC

Assembly Areas

- Accessible routes directly connect performance areas to assembly seating if a circulation path directly connects both areas
- Performance areas have an accessible route connecting the performance area to ancillary areas used by performers unless it is a *place of public accommodation* with less than 3 stories or a multi-story building with less than 3,000 SF per each story; [orchestra pits and similar performance areas are considered to be a level and are required to be inter-connected per CBC]

Public Multi-Family Housing Dwelling Units

According to HUD's May 23, 2014, deeming document, ADAS can be used as an alternative accessibility standard for projects under their jurisdiction, with some exceptions. For housing, the exception allowed by ADAS for common use areas not serving mobility feature dwelling units per 203.8, is not allowed, and all common use areas are required to be accessible unless there is another specific exception that applies.

- In multi-family residential facilities built by or on behalf of a public entity, common spaces not serving mobility dwelling units [nor serving units with adaptable features] are not required to be accessible or on an accessible route [per CBC]
- Within the mobility feature dwelling unit, the accessible route connects all spaces with the exception of unfinished attics and basements
- All rooms in a mobility feature dwelling unit are located on an accessible route, and have a turning space, which includes all bathrooms and walk-in closets, with the exception of small exterior spaces with 30" maximum in one direction
- If there is only one accessible route thru the dwelling unit, it does not pass thru bathrooms, closets, or similar spaces

Employee Only Areas

- Employee work areas [and work stations] are located on a common use circulation path and are able to be approached, entered, and exited [excepting portions that are less than 300 SF and elevated 7" or more for the space to function][per CBC]

NOTE

Individual work stations and offices have doors or openings 32" minimum clear and allow for a 30" x 48" clear floor space just over the threshold within the room or space itself—no requirement for a turning space inside the individual work station or office

- Within employee work [station] areas, a common use circulation path exists that complies with accessible route requirements for clear widths, door requirements, slope, and floor height change components; unless it is an exterior work area fully exposed to the weather, or if it is an integral component of work area equipment, [or if the area is less than 1,000 SF and defined by permanent partitions, counters, casework, or furnishing] although these areas are still required to be on an accessible route just not within [per CBC]
- Employee work stations are on an accessible route and spaces and elements within are on a common use circulation path complying with means of egress, floor surface and change in level requirements, and clear width at doors per CBC
- Machinery spaces used only by service personnel for maintenance, repair, or occasional monitoring are not required to comply or be on an accessible route

NOTE

Elevator pits/penthouses, mechanical, electrical, and communication equipment rooms are considered machinery spaces, and if only frequented on an occasional basis by service personnel for maintenance, repair, or occasional monitoring, are not required to be accessible or on an accessible route

- Common use circulation paths within employee work areas can be reduced in width by work area equipment if it is required for the equipment to function

Note: *Circulation path* is a general term. It can be a *common use circulation path* within an employee work area, which has several specific exceptions, or just a *circulation path* in general. *Circulation paths* are where pedestrians move from one place to another, and do not necessarily mean they are accessible. *Circulation paths* thru vehicular ways and unpaved paths are required to either be designed to be accessible or have an *accessible route* nearby.

Stairs are considered vertical *circulation paths*, which obviously are not accessible for the majority of people with mobility issues. There still are requirements such as tread/riser dimensions, nosing profiles, and handrails to assist people who can navigate stairs. If a vertical *circulation path* leads to an accessible area or element, there is to be an *accessible route* within the same general area—whether lift, elevator, or ramp—unless there is a specific exemption. The *accessible route* can overlap the *circulation path* or be separate in the same area.

Compliant protruding objects can project into a *circulation path* if they do not protrude into the minimum required clearance of an *accessible route*, if it does overlap the *circulation path*.

Circulation Path. An exterior or interior way of passage provided for pedestrian travel, including but not limited to, walks, hallways, courtyards, elevators, platform lifts, ramps, stairways, and landings.

Common Use. Interior or exterior circulation paths, rooms, spaces, or elements that are not for public use and are made available for the shared use of two or more people.

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

- 106.5 Definitions – Defined Terms – Circulation Path
 - 106.5 Common Use
- 203 General Exceptions
 - 203.4 Limited Access Spaces
 - 203.5 Machinery Spaces
 - 203.8 Residential Facilities
 - 203.9 Employee Work Areas
- 206 Accessible Routes
 - 206.2.1 Where Required – Site Arrival Points
 - 206.2.2 Where Required – Within a Site
 - 206.2.3 Where Required – Multi-Story Buildings and Facilities
 - 206.2.4 Where Required – Spaces and Elements
 - 206.2.6 Where Required – Performance Areas
 - 206.2.8 Where Required – Employee Work Areas
- 206.3 Location
 - 206.4.5 **except** Entrances – Tenant Spaces
- 305.6 Clear Floor Or Ground Space – Approach
 - 305.7 Maneuvering Clearance
- 402.2 Accessible Routes – Components
- 403.5 Walking Surfaces – Clearances
 - 403.5.1 Clear Width
 - 403.5.3 Passing Spaces
- 404.2.1 Doors, Doorways, and Gates – Manual Doors, Doorways, and Manual Gates – Revolving Doors, Gates, and Turnstiles
 - 404.2.3 Clear Width
 - 404.3.7 Automatic and Power-Assisted Doors and Gates – Revolving Doors, Revolving Gates, and Turnstiles
- 502.7 Parking Spaces – Relationship to Accessible Routes
- 604.8.1.2 Water Closets and Toilet Compartments – Toilet Compartments – Wheelchair Accessible Compartments – Doors
 - 604.8.2.2 Ambulatory Accessible Compartments – Doors
- 809.2 Residential Dwelling Units – Accessible Routes
 - 809.2.1 Location
 - 809.2.2 Turning Space

2016 CBC Sources:

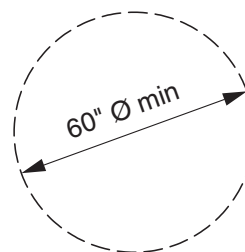
(Sources shown in blue italics differ from ADA)

- 11B-203 General Exceptions*
 - 11B-203.4 Limited Access Spaces*
 - 11B-203.5 Machinery Spaces*
 - 11B-203.8 Residential Facilities*
 - 11B-203.9 Employee Work Stations*
- 11B-206 Accessible Routes*
 - 11B-206.2.1 Site Arrival Points*
 - 11B-206.2.2 Within a Site*
 - 11B-206.2.3 Multi-Story Buildings and Facilities*
 - 11B-206.2.3.2 Distance to Elevators*
 - 11B-206.2.4 Spaces and Elements*
 - 11B-206.2.6 Performance Areas*
 - 11B-206.2.8 Employee Work Areas*
- 11B-206.3 Location*
 - 11B-206.4.5 except Tenant Spaces*
- 11B-302 Floor Or Ground Surfaces*
- 11B-303 Changes In Level*
- 11B-402.2 Accessible Routes – Components*
- 11B-403.5 Walking Surfaces – Clearances*
 - 11B-403.5.1 Clear Width*
 - 11B-403.5.3 Passing Spaces*
- 11B-404.2.1 Doors, Doorways, and Gates – Manual Doors, Doorways, and Manual Gates – Revolving Doors, Gates, and Turnstiles*
 - 11B-404.2.3 Clear Width*
 - 11B-404.3.7 Automatic and Power-Assisted Doors and Gates – Revolving Doors, Revolving Gates, and Turnstiles*
- 11B-502.7 Parking Spaces – Relationship to Accessible Routes*
- 11B-604.8.1.2 Water Closets and Toilet Compartments – Toilet Compartments – Wheelchair Accessible Compartments – Doors*
 - 11B-604.8.2.2 Ambulatory Accessible Compartments – Doors*
- 11B-809.2 Residential Dwelling Units – Accessible Routes*
 - 11B-809.2.1 Location*
 - 11B-809.2.2 Turning Space*

CLEAR FLOOR, TURNING, & MANEUVERING SPACES

General Notes

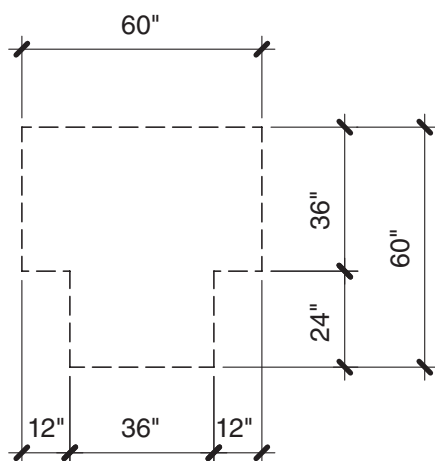
- Maneuvering, turning, and clear floor spaces are level with a maximum slope of 1:48 (2.083%) with no height changes greater than ½"—with ¼" vertical + an additional ¼" beveled with a 1:2 maximum slope
- Maneuvering, turning, and clear floor spaces require a firm, stable, and slip resistant surface and can use knee/toe clearance under objects with a clear height of 27" minimum, which can extend 25" maximum under an element
- T-shaped turning spaces can use knee and toe clearance on one of the three ends of the T only
- One full unobstructed side of a clear floor or turning space adjoins an accessible route or another clear floor space [and can overlap the accessible route unless specifically prohibited per CBC]



60" Diameter

- Accessible routes with a clear width of less than 60" have either a 60" × 60" minimum clear passing space, or a T intersection where 2 walking surfaces meet and extend 48" minimum beyond the intersection in all 3 directions of the T every 200 LF maximum

Turning Spaces



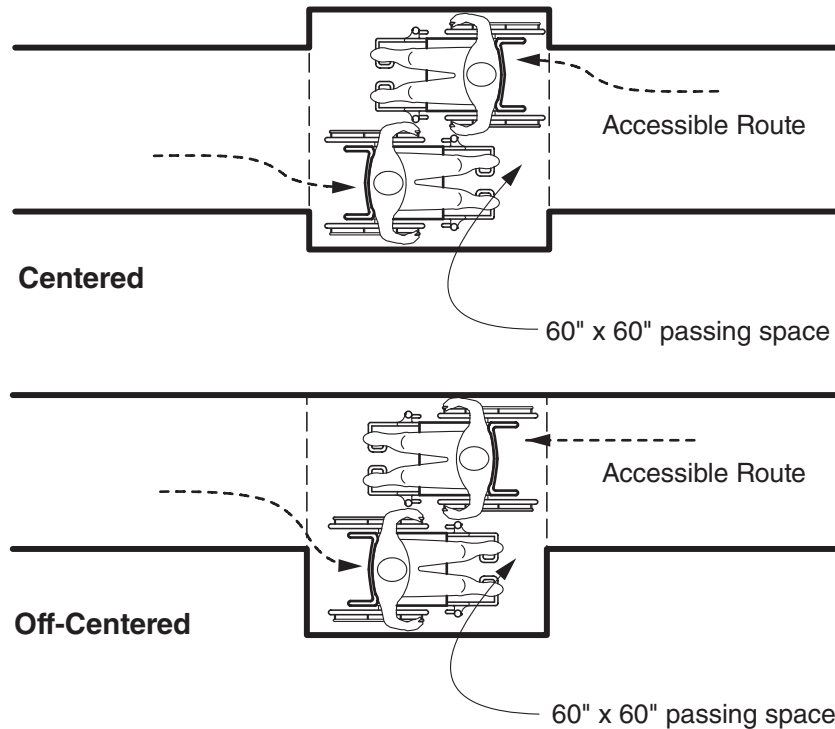
Only one of the 3 arms of the T can go underneath an object with knee/toe clearance below

60" T-Shaped

Note Having the route widen out more often not only helps those in wheelchairs or the elderly to rest, but also helps those who are Deaf, by providing them with space to view each other for communication

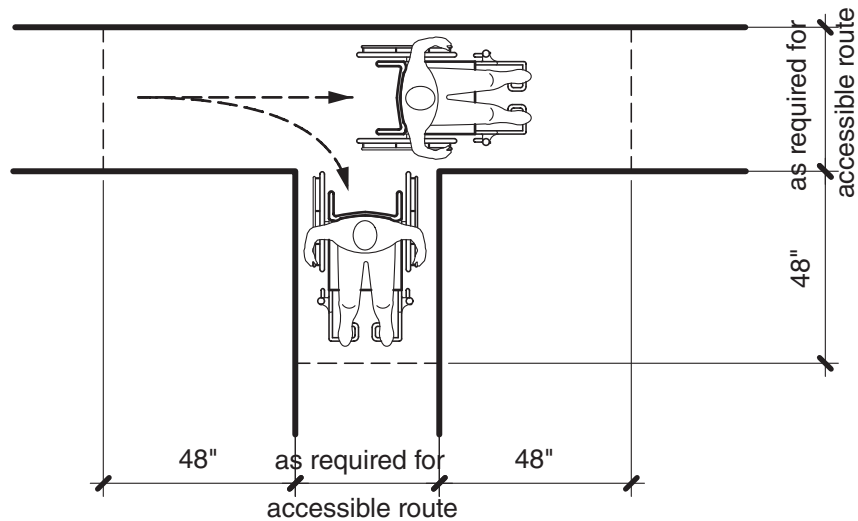
| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | Items in blue are where California provides greater access | Outside of California ignore blue text and the blue [strikeout] line itself—everything in black pertains |

60" x 60" Passing Space



If the accessible route is less than 60" wide every 200 LF maximum provide a 60" x 60" passing space

T-Shaped Intersection Passing Space



If the accessible route is less than 60" wide provide every 200 LF maximum a T-intersection that extends 48" minimum in all 3 directions of the T

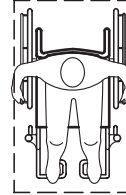
- A clear floor space is generally 30" × 48" unless located in an alcove or otherwise restricted on all or part of 3 sides

Note Elevator call controls require a clear floor space preferably to a volume of 80" above finished floor (AFF) with no recessed or protruding objects at or within that volume of space

- If the required clear floor space is confined for more than half of its distance along all or part of 3 sides, the space increases—alcoves more than 24" deep for forward approach increase from 30" to 36" × 48" minimum, and those more than 15" deep for parallel approach increase to 30" × 60"

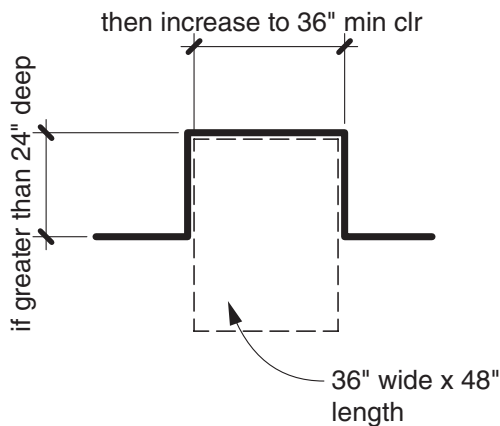
Note: Generally a clear floor space is considered to be a volume to a height of 80" that can have a counter, table, work surface, lavatory, or drinking fountain protrude into it

Unobstructed Clear Floor Space

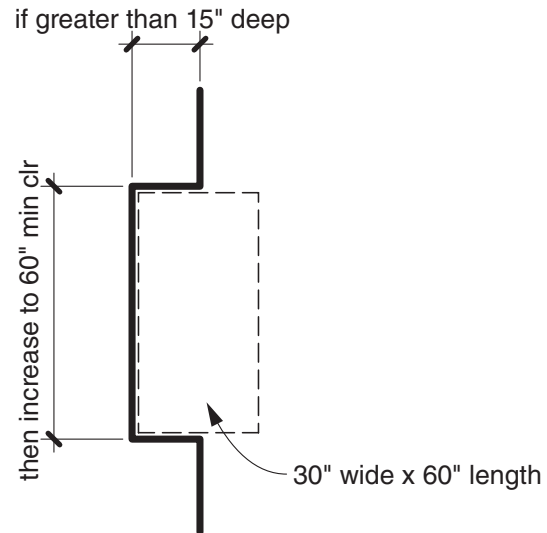


30" x 48" Clear Floor Space

Obstructed Clear Floor Spaces



Front Approach



Parallel Approach

Clear Floor Spaces in Alcoves or Otherwise Blocked on All or Part of Three Sides

- In multi-user restrooms, doors cannot swing into a required clear floor space for any fixture, but can swing into turning spaces [12" maximum unless it is the accessible compartment door, which does not have any limitations per CBC]
- In single user restrooms, doors can swing into clear floor spaces of fixtures and the turning space if there

is a 30" × 48" clear floor space beyond the arc of the door swing [in mobility dwelling units in public housing only—in all other single-user restrooms, doors can swing into clear floor spaces of fixtures if there is a 30" × 48" clear floor space beyond the arc of the door swing, but are limited to a 12" maximum intrusion into the turning space itself per CBC]

180° Turning Aisles Around An Element

- Approach aisles with less than 42" clear width leading to a 180° turn around an element with less than a 48" width, have a minimum of 60" clear at the end aisle
- Approach aisles with a minimum of 42" or more clear width leading to a 180° turn around an element with less than a 48" width, have a minimum of 48" clear at the end aisle

CBC NOTE

If the approach aisles are 2-sided, they are required to be a clear width of 44" minimum, then the end aisle has 48" minimum clear if the element is less than 48" in width per CBC

- If the element is at least 48" minimum in width, all of the aisles, including the end aisle, are to comply with the required clear widths for accessible routes

NOTE

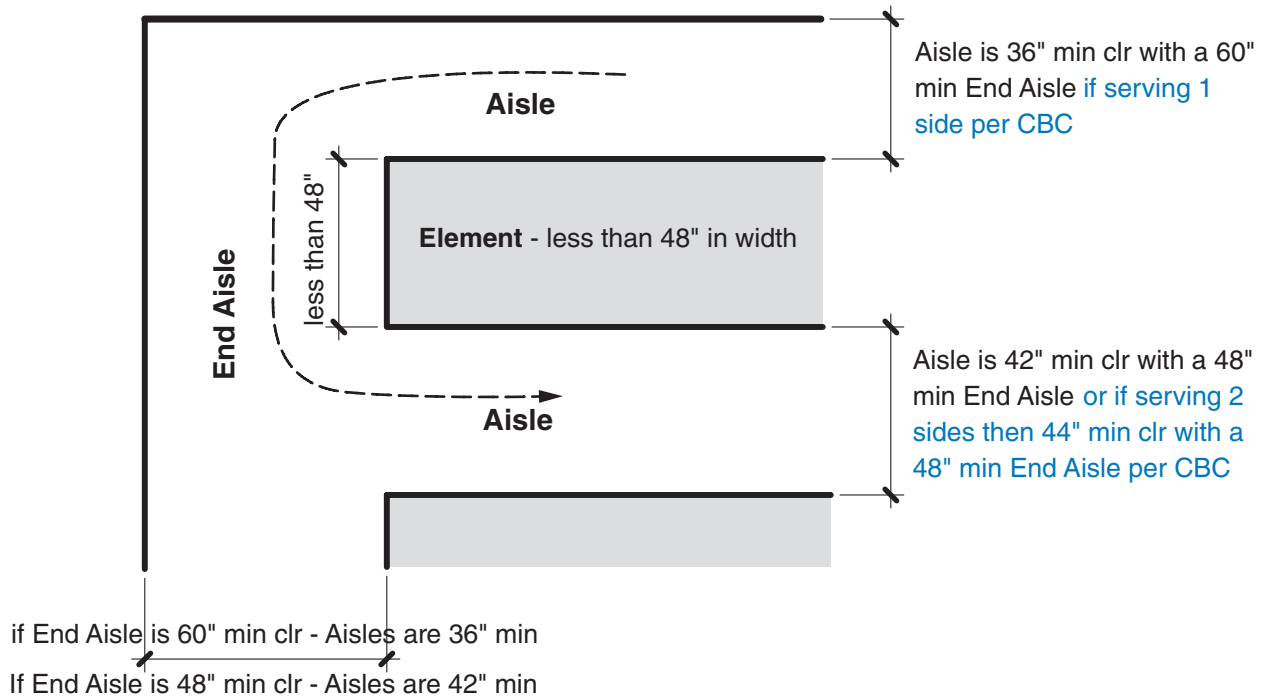
SPEED RAILS

If speed rails are placed in a switchback configuration, rather than having the queue as a single straight line, the question is whether providing 36" continually between the rails is adequate.

Typically, 36" would be fine if there is 36" clear between the edges of the stanchion base, or the stanchion itself supporting the speed rail with no base, and presuming that the queue is a single straight line. But if there are switchbacks, the end at the switchback requires more space in order to navigate the 180° switchback turn. This clear dimension at the end is 60" minimum with a 36" minimum aisle leading to it, or it can go down to 48" if the aisles are increased to 42" minimum. It can also decrease if the switchback is around an object that is 48" or wider. In the latter case, you would only need 36" at the end.

If you have a queue that is double-loaded, such as with merchandise on both sides, the minimum width of the queue goes up from 36" minimum to 44" per CBC. In this case, with a switchback, you only need 48" minimum clear at the end, rather than 60", since the aisles leading to it are greater than 42" minimum.

180° Turning Aisles Around an Element



If an Element is 48" or more in width then all Aisles and End Aisles comply with the required accessible route clear widths

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

302 Floor or Ground Surfaces
303.3 Changes in Level – Beveled
304 Turning Space
305 Clear Floor or Ground Space
 305.6 Approach
306 Knee and Toe Clearance
 306.3.2 Knee Clearance – Maximum Depth
307.4 Protruding Objects – Vertical Clearance
403.5.2 Walking Surfaces – Clearances – Clear Width at Turn
 403.5.3 Passing Spaces
407.2.1.3 Elevators – Elevator Landing Requirements – Call Controls – Clear Floor or Ground Space
603.2.3 Toilet and Bathing Rooms – Clearances – Door Swing

Advisory 407.2.1.3 Clear Floor or Ground Space

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

11B-302 Floor or Ground Surfaces
11B-303.3 Changes in Level – Beveled
11B-304 Turning Space
11B-305 Clear Floor or Ground Space
 11B-305.6 Approach
11B-306 Knee and Toe Clearance
 11B-306.3.2 Knee Clearance – Maximum Depth
11B-307.4 Protruding Objects – Vertical Clearance
11B-403.5.2 Walking Surfaces – Clearances – Clear Width at Turn
 11B-403.5.3 Passing Spaces
11B-407.2.1.3 Elevators – Elevator Landing Requirements – Call Controls – Clear Floor or Ground Space
11B-603.2.3 Toilet and Bathing Rooms – Clearances – Door Swing

WALKING SURFACES

General Notes

- Ground and floor surfaces are stable, firm, and slip resistant, with the exceptions of sports activity areas and animal containment areas
- A stable surface is one remaining unchanged when an applied force or contaminants are removed
- A firm surface is one that resists deformation of either indentation or particles moving along its surface
- A slip resistant surface provides enough friction when walking on the surface so that it is not slippery, whether it is wet or dry

NOTE

If permeable surfaces are used on an accessible route, such as compacted decomposed granite, use stabilizing admixtures or binders to create a firm and stable surface along with edging. Many of these surface types can be high maintenance, which should be taken into consideration when specifying. If not maintained, the route may very well become not accessible.

- Walking surfaces have a cross slope of 1:48 (2.083%) maximum with a slope of 1:20 (5%) or less in the direction of travel [with the exception of running slopes on sidewalks that are a maximum slope matching the grade of the adjacent street in the direction of travel per CBC]
- Walking surfaces greater than a 1:20 slope are considered either curb ramps or pedestrian ramps

Note Walking surfaces of 1:20 or less are considered sloped walkways, not ramps and therefore do not have to meet pedestrian ramp requirements

- Level area is defined as having a maximum slope in any direction of 1:48 (2.083%)
- Sloped walkways have a level area (1:48 or less) of 60" minimum in the direction of travel for the full width of the walkway at every 400 LF maximum per CBC

- Walking surfaces with an abrupt change in level exceeding 4" at the edge require a 6" minimum height curb, or if a handrail or guard rail is provided, a guide rail can be centered a minimum of 2" to 4" maximum above the walking surface or sidewalk—this is not required along an adjacent vehicular way per CBC
- Changes in level can be vertical up to ¼" maximum height, and changes between ¼" to ½" are to have a bevel with a maximum slope of 1:2 ($\approx 26.6^\circ$ from the horizontal); changes in level more than ½" are to comply with requirements for ramps, except within areas of sports activities and animal containment areas
- Thresholds have a maximum height change of ½" with ¼" vertical and from ¼" to ½" a 1:2 maximum slope – existing thresholds [can be ¾" with a 1:2 maximum bevel on each side] [comply with the ½" maximum height differential per CBC]
- Carpet and carpet tiles have ½" maximum height pile and are securely attached to the floor with firm or no cushion/pad, and with all exposed edges trimmed and fastened to the floor
- The carpet edge trim is required to have ½" maximum surface differential to the adjacent floor with a maximum of ¼" vertical and an additional ¼" at a 1:2 slope [—if the edge is ¼" maximum, no edge treatment is required per CBC]

Level Changes

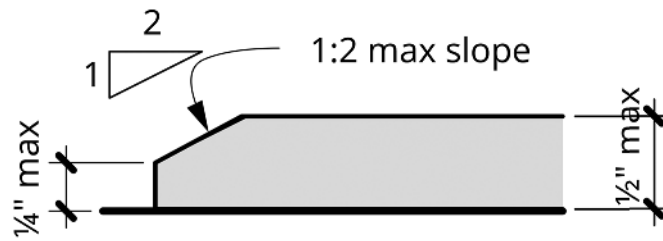


Carpet Pile Height



Maximum Vertical Level Change

| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | Items in blue are where California provides greater access | Outside of California ignore blue text and the blue [strikeout] line itself—everything in black pertains |



- A slope of 1:2 is equivalent to 26.5° from the horizontal
- ~~3/4" vertical height is allowed for existing thresholds with a 1:2 max slope~~

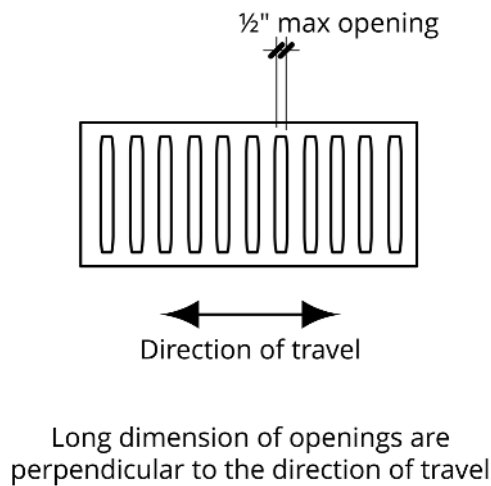
Maximum Level Change without a Ramp Typical at Thresholds

- Openings in ground and floor surfaces are 1/2" maximum whether in grates, tree wells, or between pavers, with the exceptions of the elevator/lift hoistway edge to the car platform edge, as well as the rail flanges on circulation paths at boarding platforms where the paths cross tracks

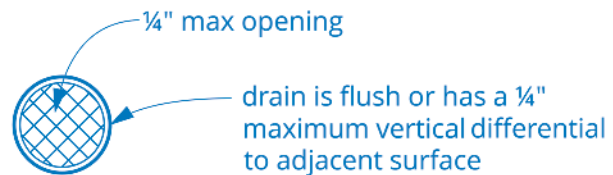
Note Openings in circulation paths are sized so a sphere greater than 1/2" in diameter cannot pass thru

- Elongated openings located on walking surfaces are 1/2" maximum with the 1/2" slot openings perpendicular to the direction of travel
- Shower floors have a 1:48 maximum slope and drains in showers have grates flush with the adjacent floor surface with openings of 1/4" maximum per CBC

Openings In Floor & Ground Surfaces



Grates



Shower Floor Drains per CBC

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

302.1 Floor or Ground Surfaces – General
 302.2 Carpet
 302.3 Openings
303 Changes in Level
305.2 Clear Floor or Ground Space – Floor or Ground Surfaces
403.3 Walking Surfaces – Slope
404.2.5 Doors, Doorways, and Gates – Manual Doors, Doorways, and Manual Gates – Thresholds
 404.3.3 Automatic and Power-Assisted Doors and Gates – Thresholds
407.4.3 Elevators – Elevator Car Requirements – Platform to Hoistway Clearance
410.4 Platform Lifts – Platform to Runway Clearance
810.10 Transportation Facilities – Track Crossings

Advisory 302.1 General
Advisory 302.2 Carpet

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

11B-302.1 Floor or Ground Surfaces – General
 11B-302.2 Carpet
 11B-302.3 Openings
11B-303 Changes in Level
 11B-303.5 Warning Curbs
11B-305.2 Clear Floor or Ground Space – Floor or Ground Surfaces
11B-403.3 Walking Surfaces – Slope
 11B-403.7 Continuous Gradient
11B-404.2.5 Doors, Doorways, and Gates – Manual Doors, Doorways, and Manual Gates – Thresholds
 11B-404.3.3 Automatic and Power-Assisted Doors and Gates – Thresholds
11B-407.4.3 Elevators – Elevator Car Requirements – Platform to Hoistway Clearance
11B-410.4 Platform Lifts – Platform to Runway Clearance
11B-608.9 Shower Compartments – Shower Floor or Ground Surface
11B-810.10 Transportation Facilities – Track Crossings

Advisory 11B-302.1 General
Advisory 11B-302.2 Carpet

PROTRUDING, POST-MOUNTED, & OVERHANGING OBJECTS

Protruding Objects

- Protruding objects can project into a circulation path but cannot reduce the minimum required clear width on an accessible route or path of travel
- Objects can project from a vertical surface into the circulation path 4" maximum when the leading edge is more than 27" above finished floor (AFF) and less than 80" AFF, unless there is a cane detectable barrier

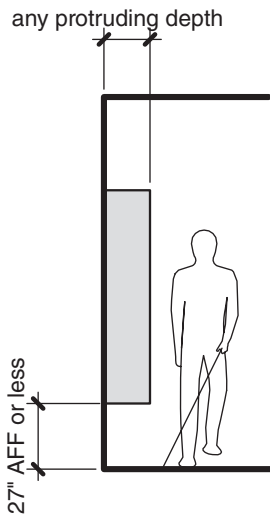
Note: Lavatories can be a protruding object, depending upon the restroom layout and approach. If the leading edge is greater than 27" AFF and if the approach is from the front, it is fine. This would be similar to the typical single user restroom where the lavatory shares

the same plumbing wall as the toilet, or if the lavatory is placed in an alcove.

If there is enough space for a side approach, then the lavatory could be considered a protruding object requiring a cane detectable barrier. If the lavatory is placed precisely so its leading edge is at 27" AFF, by definition it would not be considered a hazardous protruding object, since it is not greater than 27" AFF—the definition of limitations on protruding objects. [California requires the front edge of a lavatory to be at a minimum of 29" AFF; therefore, if there is enough space for a side approach, it does require a cane detectable barrier.](#)

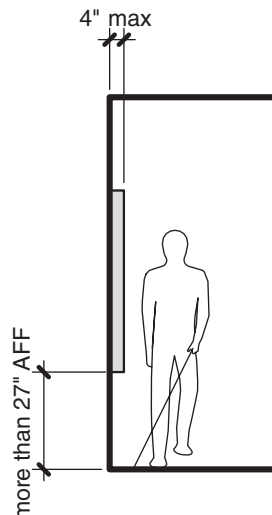
- Objects can project any amount if the leading edge is either greater than 80" AFF or 27" or less AFF; otherwise, a cane detectable barrier is required

Protruding Objects



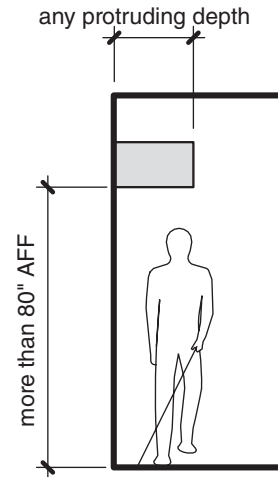
If the leading edge is at 27" or less AFF then there is no limitation on the protruding depth

Leading Edge 27" AFF or Less AFF



If the leading edge is greater than 27" AFF then the protrusion is 4" maximum without a cane detectable barrier

Leading Edge Greater Than 27" AFF



If the leading edge is greater than 80" AFF then the protruding depth does not have a limitation

Leading Edge Greater Than 80" AFF

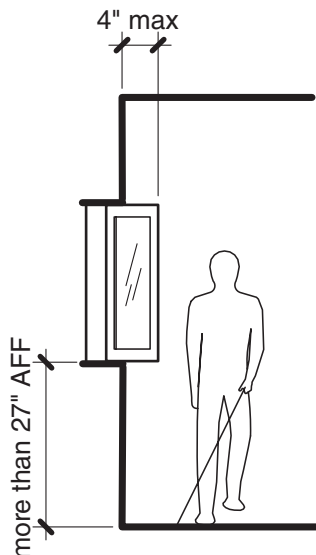
| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | [Items in blue are where California provides greater access](#) | Outside of California ignore [blue text](#) and the [blue \[strikeout\]](#) line itself—everything in black pertains |

- At doorways, no projections are allowed into the required clear opening width below 34" AFF and 4" maximum projection between 34" AFF and 80" AFF, with the exception of alterations for a $\frac{5}{8}$ " door stop on the latch side

Note Consideration should be given to not project or overhang anything into the volume of a required clear floor space below 80", such as the 18" x 18" clear floor space required in front of a tactile sign

- Casement and awning type windows cannot project into a circulation path more than 4" if their leading edge is greater than 27" AFF and less than 80" without a cane detectable barrier

Protruding Objects – Windows



Casement & awning type windows opening onto a circulation path can project 4" maximum if their leading edge is greater than 27" AFF unless there is a cane detectable barrier

Leading Edge Greater Than 27" AFF - Example

- Handrails are allowed to protrude from the face of the wall 4½" maximum, [and 3½" maximum into the required clear width on both sides of ramps, with the exception of residential ramps at public

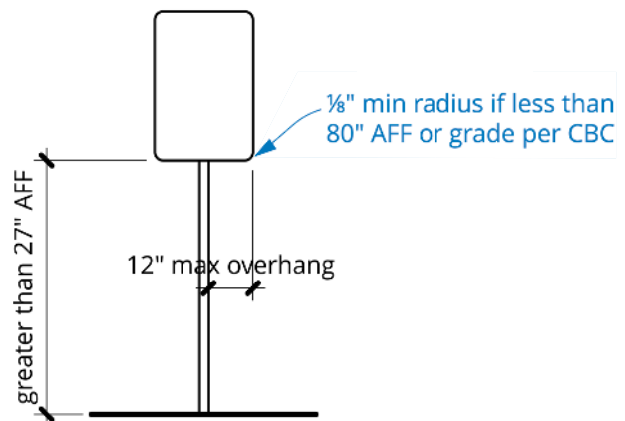
multi-family housing if at the minimum width of 36", with no protrusion in the required clear width at stairs per CBC]

- Surface mounted fire extinguishers generally protrude more than 4", requiring a cane detectable barrier if the leading edge is greater than 27" AFF or grade

Post-Mounted Objects

- Post-mounted objects can overhang circulation paths 12" maximum when the leading edge is above 27" AFF and below 80" AFF, unless there is a cane detectable barrier
- Sloping portions only of stair handrails can project from a post more than 12"
- Edges of post-mounted objects have $\frac{1}{8}$ " minimum radius corners if less than 80" above grade per CBC

Post-Mounted Objects

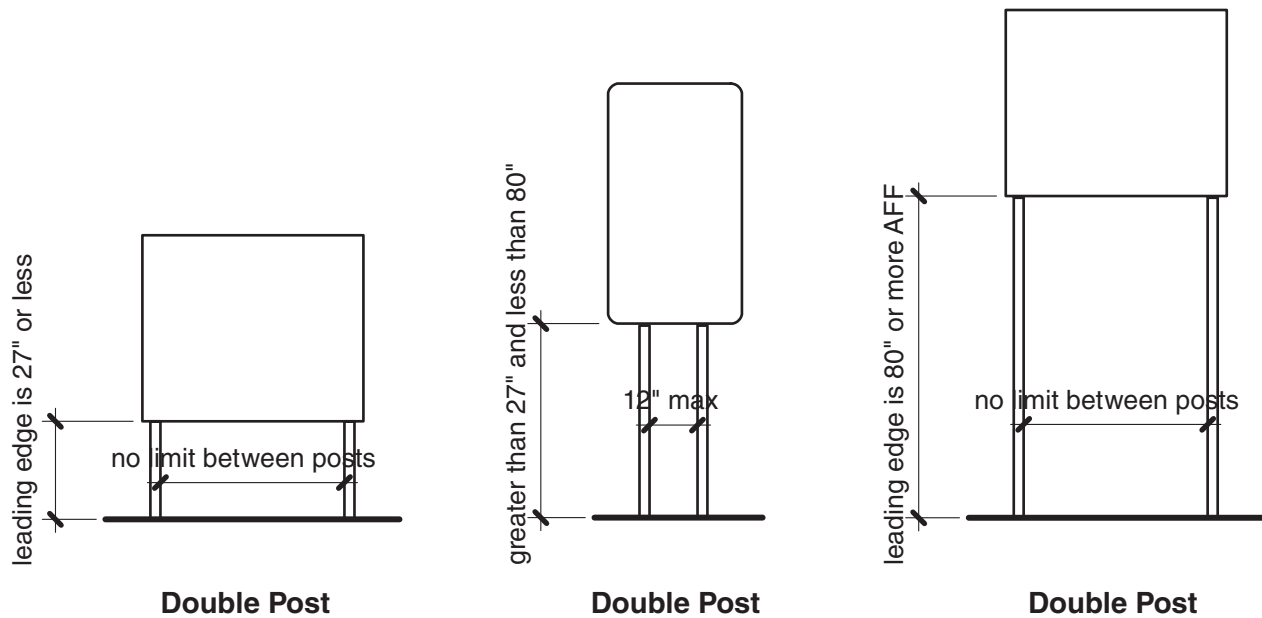


- If greater than a 12" overhang, provide a cane detectable barrier below
- No limits if the leading edge is 27" or below or if 80" or higher

Single Post

- Double post-mounted objects can have 12" maximum clear between posts if the leading edge is greater than 27" AFF and less than 80" AFF; otherwise, a cane detectable barrier is required

Double Post-Mounted Objects



NOTE

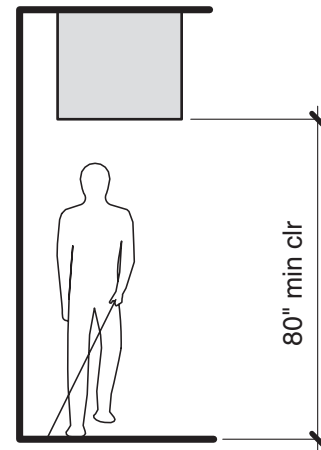
Valves on standpipes located within stairwells are not considered post-mounted objects, since they are located on a pipe, not a post. If the valves extend greater than 4" from the face of the pipe and if its leading edge is greater than 27" AFF, it would require a cane detectable barrier below.

Overhanging Objects

- Overhanging objects provide 80" minimum clear below or the leading edge is 27" maximum AFF
- Door stops and closers are located 78" minimum clear AFF
- Staircases that are open below onto a circulation path require a cane detectable barrier where the underside of the stairs is greater than 27" and less than 80" AFF or grade

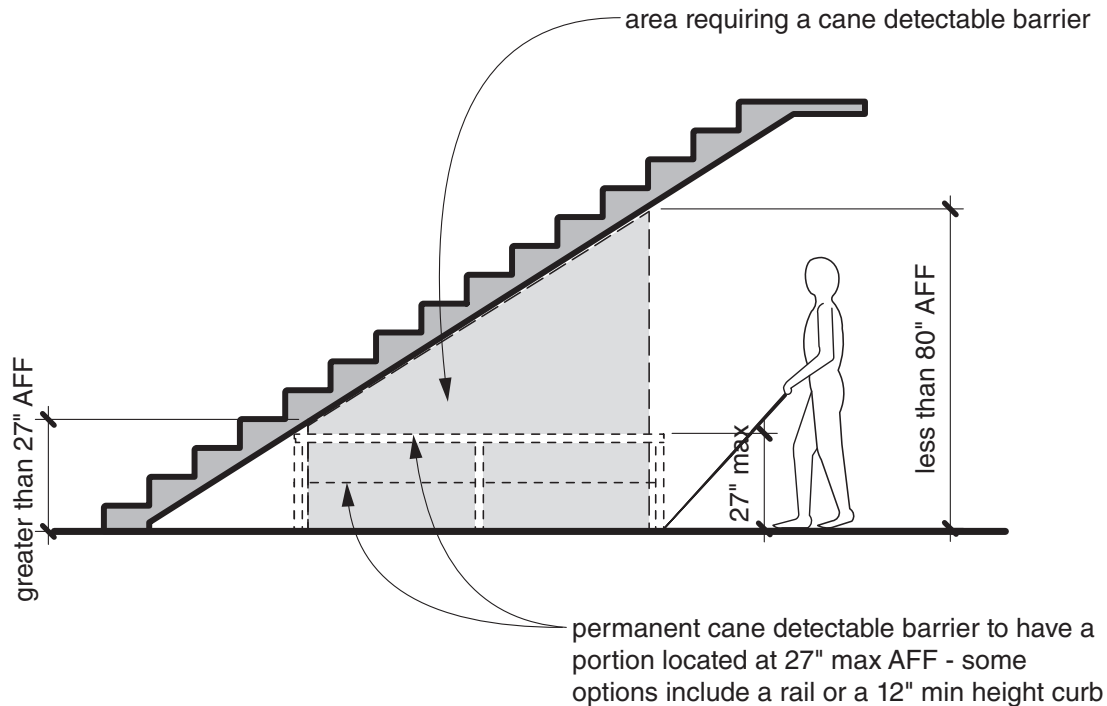
Note Cane detectable barriers below stairs can be a railing with a portion 27" maximum AFF, or a platform or curb at a suggested minimum height of 12"

Overhanging Objects



Provide a cane detectable barrier underneath overhanging objects having less than 80" minimum clear height

Stairs as an Overhanging Object



- All accessible [\[van\]](#) parking spaces, their access aisle, and the full vehicular route from the entry, to the space, and to the exit, have a 98" minimum clear height [\[per CBC\]](#)
- Provide vertical clearance of 114" minimum for the accessible passenger loading zone—the accessible pull-up space, loading area, and the full vehicular route serving the area
- Where a guy support is located in or within 24" of a circulation path, a vertical guy brace, sidewalk guy, or similar device is required [per CBC](#)
- Within play areas there is no projection limitation into the circulation paths, provided the accessible routes serving the ground level play components have a minimum vertical height clearance of 80"
- Within areas of sports activity there is no projection limitation into circulation paths

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

204.1 *excep* Protruding Objects – General
307 Protruding Objects
 307.2 Protrusion Limits
 307.3 Post-Mounted Objects
 307.4 Vertical Clearance
 307.5 Required Clear Width
404.2.3 Doors, Doorways, and Gates – Manual
Doors, Doorways, and Manual Gates – Clear Width
502.5 Parking Spaces – Vertical Clearance
503.5 Passenger Loading Zones – Vertical Clearance
1008.2.1 Play Areas – Accessible Routes – Ground
Level and Elevated Play Components

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

11B-204.1 *excep* Protruding Objects – General
11B-307 Protruding Objects
 11B-307.2 Protrusion Limits
 11B-307.3 Post-Mounted Objects
 11B-307.4 Vertical Clearances
 11B-307.4.1 *Guy Braces*
 11B-307.5 Required Clear Width
11B-404.2.3 Doors, Doorways, and Gates – Manual
Doors, Doorways, and Manual Gates – Clear Width
11B-405.5 excep Ramps – Clear Width
11B-502.5 Parking Spaces – Vertical Clearance
11B-503.5 Passenger Drop-Off and Loading Zones –
Vertical Clearance
11B-1008.2.1 Play Areas – Accessible Routes –
Ground Level and Elevated Play Components

REACH RANGES

General Notes

- Reach ranges are from a 30" × 48" level clear floor space with a maximum slope of 1:48
- If the object is located within an alcove greater than or blocked more than 24" deep and requires a forward approach, the level clear floor space increases to 36" × 48"
- If the object is located within an alcove greater than or blocked more than 15" deep and requires a parallel approach, the level clear floor space increases to 30" × 60"
- One full unobstructed side of a clear floor space either adjoins an accessible route or another clear floor space or overlaps if allowed
- All required operable parts are within compliant reach ranges with the exception of parts used by service or maintenance personnel and dedicated electrical or communication receptacles

Switches, non-dedicated outlets, security and intercom systems, environmental controls, appliance and plumbing fixture controls, and circuit breakers if operated by the public, are all required to be accessible, within reach range from a clear floor space, and operable with one hand without tight grasping, pinching, or twisting of the wrist.

- Controls, outlets, and switches for use by an occupant are measured to the top of the receptacle box for the outlet or switch for the upper reach range, and to the bottom of the outlet box for the lower reach range per CBC
- At each location that a depository, vending, or change machine is provided, 1 minimum of each type has controls within compliant reach ranges; a level clear floor space; controls that are operable with one hand without tight grasping, pinching, or twisting of the wrist; an operating force of 5 lbs maximum; and located on an accessible route with the exception of drive-up depositories
- 5% of lockers and interior mailboxes are accessible, with 1 minimum of each type being within compliant reach range, from a level clear floor space, having compliant operating force, and located on an accessible route

- Mailboxes for multi-family residential facilities built by or on behalf of a public entity have one minimum for each mobility unit with compliant reach ranges, clear floor space, operation, and on an accessible route [and one minimum meeting these requirements for each adaptable unit per CBC]
- Operable windows in accessible rooms to be operated by the occupants, including mobility guest rooms in transient lodging and student housing mobility sleeping rooms, have one minimum window and all required operable windows accessible, which includes compliant reach ranges, clear floor space, operation, and located on an accessible route
- Mobility and communication feature dwelling units in multi-family residential facilities built by or on behalf of a public entity are exempt from the window requirements
- Fuel dispensers have highest operable parts at 54" maximum measured from the vehicular way if located on existing curbs
- Electric vehicle charging stations (EVCS) have all operable parts within reach range per CBC
- Pedestrian traffic control buttons are 48" maximum above the adjacent ground surface per CBC

NOTE

CLEAR FLOOR SPACES – ARE THEY REALLY CLEAR?

There are certain things in Access that, at first glance, appear to be clear. But many of the simple things are not as intuitive as you might imagine, particularly if you are not a wheelchair user, or not blind nor deaf—clear floor spaces, for instance. We know that a clear floor space is 30" x 48" unless confined on all or part of three sides. But how do we apply it, how do we show it—particularly when we have enough space so the long edge can be either parallel or perpendicular to an element?

When we talk about clear floor spaces, think of the approach to an element, whether forward or parallel, and in some circumstances both. It is not just a matter of providing a space, or drawing a rectangle perpendicular or parallel to an element. In most cases, a clear floor space relates directly to reach ranges. So one of the questions is: What do I need to reach? If it is something on a vertical surface, then either a front or side approach is feasible. The rectangular space can then be placed either parallel or at right angles to this vertical surface, depending upon the space you have. If what you need to reach is set back from the edge of a counter, you cannot do a front approach without having knee/toe clearance below. In this latter case, you will need to show a parallel approach.

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Forward Reach Range With A Forward Approach

- Unobstructed forward reach range is 15" minimum to 48" maximum AFF
- Obstructed forward reach ranges have the same or less reach depth above the obstruction as the clear knee/toe depth below

NOTE

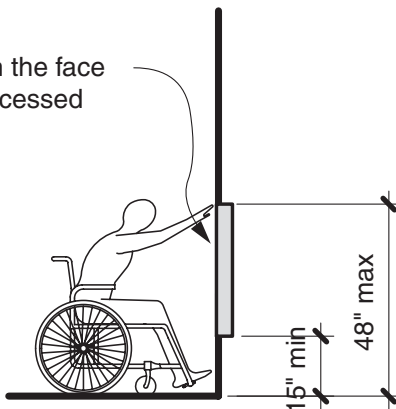
A forward reach from a wheelchair only allows you to reach as far as your toes. This is why we need the same clear depth at a minimum below as the reach depth above. Although some people can reach further than their toes, this is not the norm.

- Obstructed forward reach range over an object with a maximum depth of 20" is 48" maximum AFF
- Obstructed forward reach over an object with a minimum depth greater than 20" to 25" maximum is 44" maximum AFF
- Nothing on the back wall is accessible if located greater than a depth of 25"

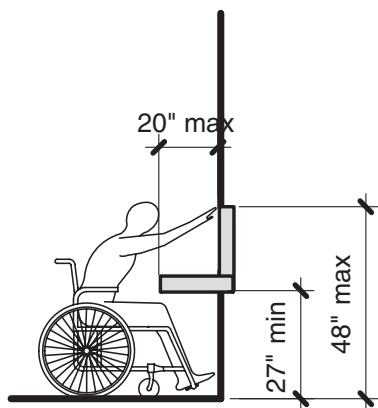
Typical kitchen cabinets cannot have flush-mounted objects on the back wall if the operable parts are located more than 44" AFF, since they would not be within reach range for front approach, presuming the counter with the nosing is 25" maximum in depth. If the counter is 24" deep and at a maximum height of 34" AFF, 46" AFF is within side reach range.

Forward Reach from a Forward Approach

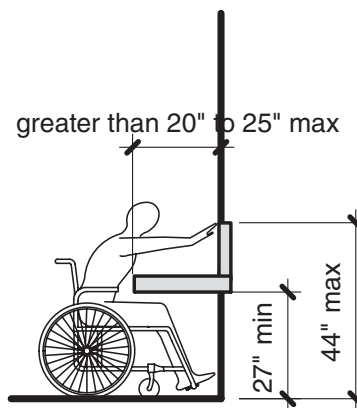
object is flush with the face of the wall - not recessed



Unobstructed Reach



Obstructed Shallow Reach



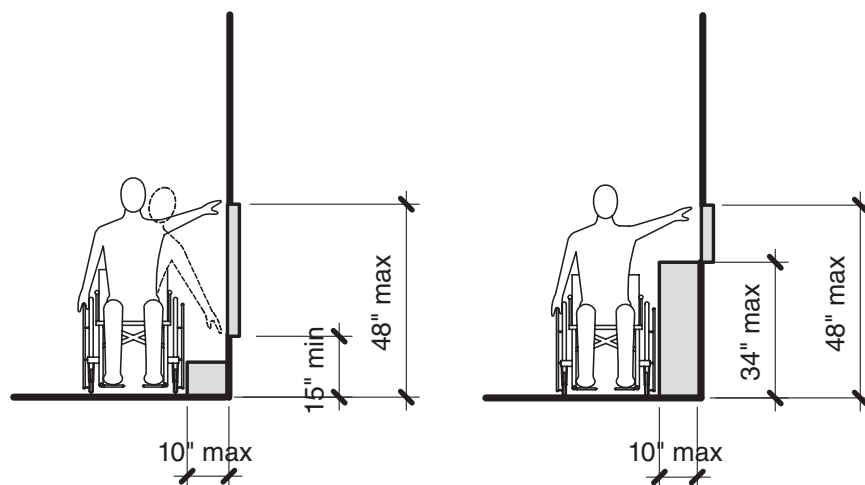
Obstructed Deeper Reach

Clear floor space below an object is the same depth as the reach depth above the object at a minimum

Side Reach Range With A Parallel Approach

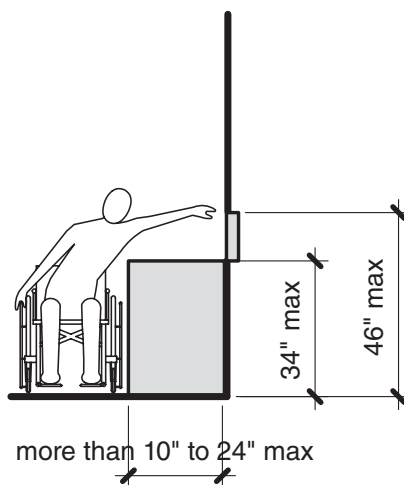
- Unobstructed side reach range is 15" minimum to 48" maximum AFF
- Obstructed side reach range over a narrow object a maximum of 10" in depth is also 15" minimum to 48" maximum AFF if the object is 34" maximum AFF
- Obstructed side reach over an object more than 10" to a maximum of 24" in depth is a maximum of 46" AFF, presuming the object is 34" maximum AFF
- Nothing beyond 24" deep is accessible or if the side reach is over an object greater than 34" AFF
- Obstructed side reach range above a counter greater than 34" AFF can only have objects within reach range if the objects project enough to be located at the front edge and 48" maximum AFF

Side Reach with a Parallel Approach



If the obstruction is higher than 34" then items on the back wall are outside of the reach range

Narrow Obstruction



If the obstruction is deeper than 24" then items on the back wall are outside of the reach range

Deeper Obstruction

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

205.1 **excep** Operable Parts – General
225.2.1 Storage – Lockers
228 Depositories, Vending Machines, Change
Machines, Mail Boxes, and Fuel Dispensers
 228.2 Mail Boxes
229 Windows
305.2 Clear Floor or Ground Space – Floor or Ground
Surfaces
 305.3 Size
 305.6 Approach
 305.7 Maneuvering Clearance
308.2 Reach Ranges – Forward Reach
 308.3 Side Reach
309 Operable Parts
811 Storage

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

11B-205.1 **excep** Operable Parts – General
11B-225.2.1 Storage – Lockers
*11B-228 Depositories, Vending Machines, Change
Machines, Mail Boxes, Fuel Dispensers, and Electric
Vehicle Charging Stations*
 11B-228.2 Mail Boxes
 *11B-228.3.1.2 Electric Vehicle Charging Stations –
Operable Parts*
11B-229 Windows
11B-305.2 Clear Floor or Ground Space – Floor or
Ground Surfaces
 11B-305.3 Size
 11B-305.6 Approach
 11B-305.7 Maneuvering Clearance
*11B-308.1.1 Reach Ranges – General – Electrical
Switches*
 11B-308.1.2 Electrical Receptacle Outlets
 11B-308.2 Forward Reach
 11B-308.3 Side Reach
11B-309 Operable Parts
*11B-703.7.2.7 Signs – Symbols of Accessibility –
Symbols – Pedestrian Traffic-Control Buttons*
11B-811 Storage

DOORS & GATES – GENERAL

Entrance Notes

- [60% of all public entries unless specifically noted otherwise][100% of all entrances] are required to be accessible and on an accessible route [per CBC]
- 100% of all entrances and exterior ground floor exits are required to be accessible, with the exception of those serving smoke-proof enclosures, exit doors serving stairs or stairwells only, and exits located greater than 24" above grade that are in excess of what is required by exiting codes per CBC
- Direct access entries from parking structures to a building are all required to be accessible
- Direct access from each tunnel or elevated walkway to a building have one entry minimum accessible [with all being accessible per CBC]
- Tenant spaces and rooms have one minimum entry accessible [with all being accessible per CBC]
- Each room or space has a minimum of one door, doorway, or gate accessible [with all being accessible per CBC]
- Self-storage facility units not required to be accessible are not required to be on an accessible route
- Doors, doorways, and gates operated only by security personnel do not need to comply with the requirements of hardware, closing speed, and operating force
- Power-assisted and automatic doors operated only by security personnel do not need to comply with the requirements of maneuvering clearances, doors in series, control clear floor space, break-out opening, and revolving doors, gates, or turnstiles
- When security personnel operate the entries for everyone, provide a sign on the approach side stating – ENTRY RESTRICTED AND CONTROLLED BY SECURITY PERSONNEL per CBC
- Each dwelling unit in public multi-family residential facilities has at least the primary entry door accessible and not located in a bedroom
- Restricted entrances to a building have a minimum of one entry accessible [with all being accessible per CBC]
- Service entrances that are the only entry to a building or tenant space have 1 entry minimum accessible

- In existing buildings, a service entry is not the only accessible entrance unless it is the only entrance per CBC
- At medical and long-term care facilities where the period of stay could exceed 24 hours, weather protection is to be provided from the passenger loading zone to a minimum of 1 entry, including the full accessible drop-off and loading area (not the vehicle pull-up space), and the full accessible route to the accessible entry per CBC

Door & Gate Notes

- Revolving doors, revolving gates, and turnstiles are not considered part of an accessible route and therefore require a swinging or sliding door in the same vicinity
- Width of a door or gate opening, or the active leaf in a pair of doors, is 32" minimum clear, measured from the face of the door in the 90° open position to the door stop, and has the required maneuvering space
- If the opening is deeper than 24", provide a door with a clear opening width of 36" in the 90° open position
- Door openings have an 80" minimum clear height with the exception of door closers and door stops, which can be at 78" minimum AFF to the bottom of the mechanism
- No projections into the required clear opening width below 34" AFF, except in alterations where a 5/8" maximum latch side stop is permitted
- A 4" maximum projection is allowed on the push side of the door into the required clear width of the opening from 34" to 80" AFF
- Force for both the push and pull sides of all interior doors or gates and sliding or folding doors is 5 lbs. maximum; the Administrative Authority can increase the maximum effort to operate fire doors but not to exceed 15 lbs.; [15 lbs. maximum required for fire rated doors per CBC]
- Exterior doors located at a single location leading to the same space, if a minimum of 1 powered door out of 8 leafs or fraction of 8 leafs has 5 lbs. maximum operating force, then the other doors can go up to 8.5 lbs. maximum per CBC

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- Swinging doors and gates have a smooth surface free of sharp or abrasive edges extending 10" AFF or ground for the full width on the push side; joints on this 10" surface can have a 1/16" maximum surface differential; cavities created by adding kickplates are capped
- A kickplate or smooth surface is not required on sliding doors, or doors/gates that do not extend to within 10" of the floor or ground, or tempered glass doors without stiles having a bottom rail or shoe tapering 60° minimum from the horizontal on the top edge
- If vision lights are present in or adjacent to a door that permits viewing, one panel minimum has its leading edge at 43" maximum AFF; this is not required if the lowest edge of panel is greater than 66" AFF

Note Be aware that if vision lights are located on the strike side of the door, this may conflict with the location of any permanent room signage if signage is required.

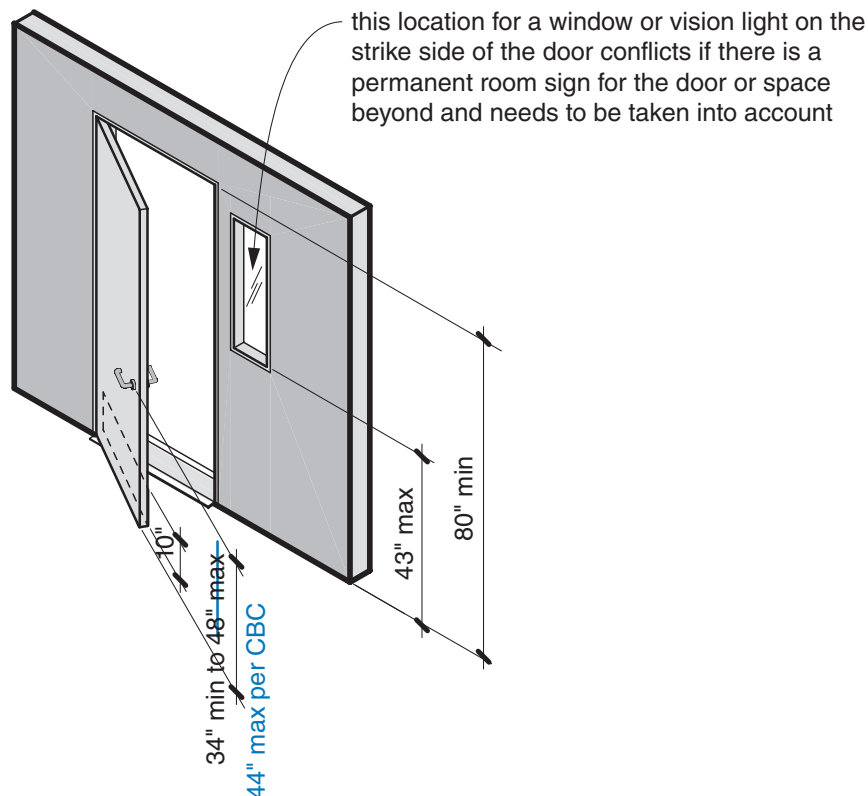
Hardware Notes

- All operable door hardware is located 34" minimum to ~~48" maximum AFF~~ **44" maximum AFF per CBC**
- Access gates at pools, spas, and hot tubs can have the operable part of the latch release on a

self-latching device at 54" above grade maximum, if the gate is not also self-locking, requiring the use of a key, electronic opener, or integral combination lock

- Hardware is required to be operable with one hand without tight grasping, pinching, or twisting of the wrist, with 5 lbs. maximum operating force
- Latch bolts and other devices holding the door in the closed position are not required to comply with the 5 lbs. maximum operating force
- Existing glazed doors without stiles and existing overhead rolling doors/grilles can have existing locks in any location with the locks activated at the top or bottom rail
- Closers have a closing time of 5 seconds minimum from 90° open position to 12° from the latch strike side
- Spring hinges have a closing time of 1½ seconds minimum from 70° to the closed position
- Operating hardware is fully exposed on both sides of sliding doors when the door is fully opened
- **The arm of lever hardware is curved to return to within ½" of the face of the door for required exit doors, with some exceptions per CA State Fire Marshal**

Doors



SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

- 206.4 Accessible Routes – Entrances
 - 206.4.1 Public Entrances
 - 206.4.2 Parking Structure Entrances
 - 206.4.3 Entrances from Tunnels or Elevated Walkways
 - 206.4.5 Tenant Spaces
 - 206.4.6 Residential Dwelling Unit Primary Entrance
 - 206.4.7 Restricted Entrances
 - 206.4.8 Service Entrances
- 206.5.2 Doors, Doorways, and Gates – Rooms and Spaces
- 307.4 Protruding Objects – Vertical Clearance
- 309.4 Operable Parts – Operation
- 404.1 Doors, Doorways, and Gates – General
 - 404.2 Manual Doors, Doorways, and Manual Gates
 - 404.2.1 Revolving Doors, Gates, and Turnstiles
 - 404.2.2 Double-Leaf Doors and Gates
 - 404.2.3 Clear Width
 - 404.2.4 Maneuvering Clearances
 - 404.2.7 Door and Gate Hardware
 - 404.2.8 Closing Speed
 - 404.2.9 Door and Gate Opening Force
 - 404.2.10 Door and Gate Surfaces
 - 404.2.11 Vision Lights
 - 404.3.7 Automatic and Power-Assisted Doors and Gates – Revolving Doors, Revolving Gates, and Turnstiles
- 703.4.2 Signs – Installation Height and Location – Location

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

- 11B-206.4 Accessible Routes – Entrances*
 - 11B-206.4.1 Entrances and Exterior Ground Floor Exits*
 - 11B-206.4.2 Parking Structure Entrances*
 - 11B-206.4.3 Entrances from Tunnels or Elevated Walkways*
 - 11B-206.4.5 Tenant Spaces*
 - 11B-206.4.6 Residential Dwelling Unit Primary Entrance*
 - 11B-206.4.7 Restricted Entrances*
 - 11B-206.4.8 Service Entrances*
 - 11B-206.4.10 Medical Care and Long-Term Care Facilities*
 - 11B-206.5.2 Doors, Doorways, and Gates – Rooms and Spaces*
- 11B-307.4 Protruding Objects – Vertical Clearance*
 - 11B-307.4.1 Guy Braces*
- 11B-309.4 Operable Parts – Operation*
- 11B-404.1 Doors, Doorways, and Gates – General*
 - 11B-404.2 Manual Doors, Doorways, and Manual Gates*
 - 11B-404.2.1 Revolving Doors, Gates, and Turnstiles*
 - 11B-404.2.2 Double-Leaf Doors and Gates*
 - 11B-404.2.3 Clear Width*
 - 11B-404.2.4 Maneuvering Clearances*
 - 11B-404.2.7 Door and Gate Hardware*
 - 11B-404.2.8 Closing Speed*
 - 11B-404.2.9 Door and Gate Opening Force*
 - 11B-404.2.10 Door and Gate Surfaces*
 - 11B-404.2.11 Vision Lights*
 - 11B-404.3.7 Automatic and Power-Assisted Doors and Gates – Revolving Doors, Revolving Gates, and Turnstiles*
- 11B-703.4.2 Signs – Installation Height and Location – Location*
- Advisory 11B-404.2.7 Door and Gate Hardware*

CA State Fire Marshal Part 12 Sources:

- Section 12-10-202(f) Exits – Single-Point Latching or Locking Devices – Design*

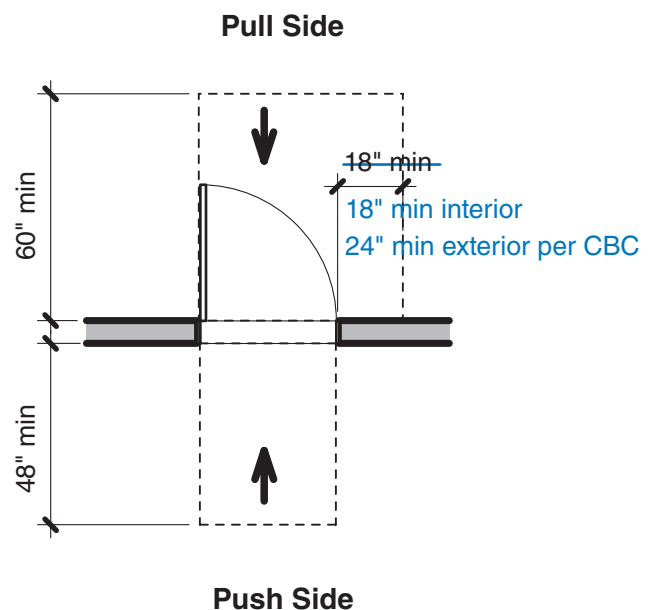
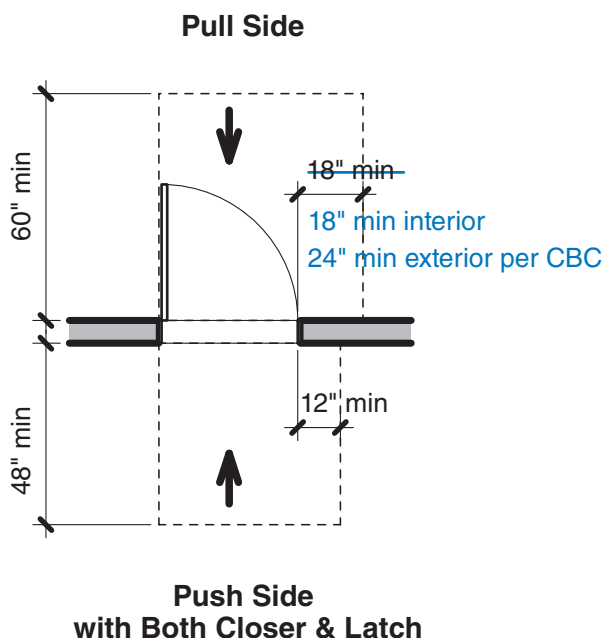
DOORS & GATES – MANEUVERING CLEARANCES

General Notes

- All required clear floor spaces are to have a maximum slope of 1:48 (2.083%), and any vertical height changes are limited to ¼" maximum vertical with an addition ¼" at a 1:2 slope for a total of ½" height differential
- Maneuvering clearances are firm, stable, and slip resistant; if openings exist in the floor surface, they are ½" maximum, and carpet, if exists, has a pile height of ½" maximum measured to the backing, cushion, or pad with all exposed edges fastened to the floor
- Where doors are recessed more than 8", use clearance requirements for forward approach
- One minimum of the active leafs of double-leaf doors or gates has the required clear opening width and maneuvering space
- Hospital patient room entry doors ~~[do not require latch side clearance]~~ [have the required clearances per CBC]

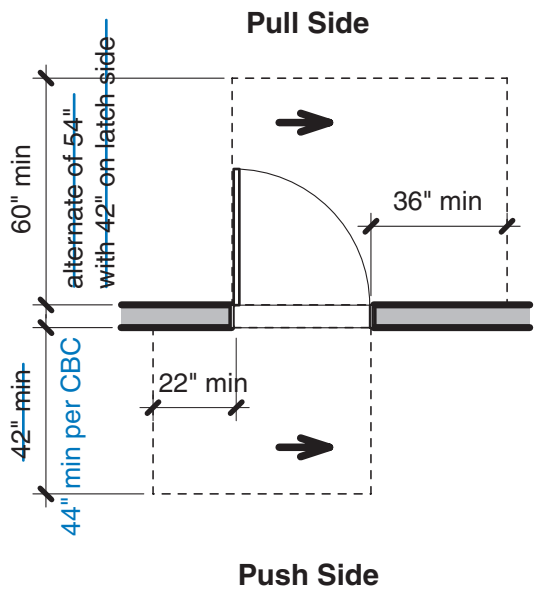
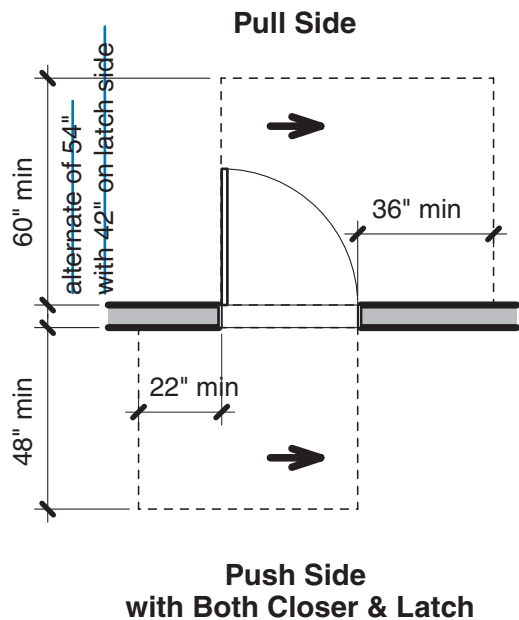
- Restroom compartments have ~~[42" minimum clear with latch approach]~~ [48" minimum clear] from the face of the door to the wall or other obstructions outside of the compartment [for push side approach or 60" if pull approach per CBC]
- Power-assisted doors and gates comply with manual door clearances
- Automatic doors and gates without standby power comply with manual door clearances if serving an accessible means of egress system, unless the doors remain open in the power-off mode
- Controls for powered doors have a level 30" × 48" clear floor space outside of the door swing
- Powered doors have 32" minimum clear in both the power-on and power-off mode based on [both leafs in the open position] [one leaf in the 90° open position per CBC]

Forward Approach

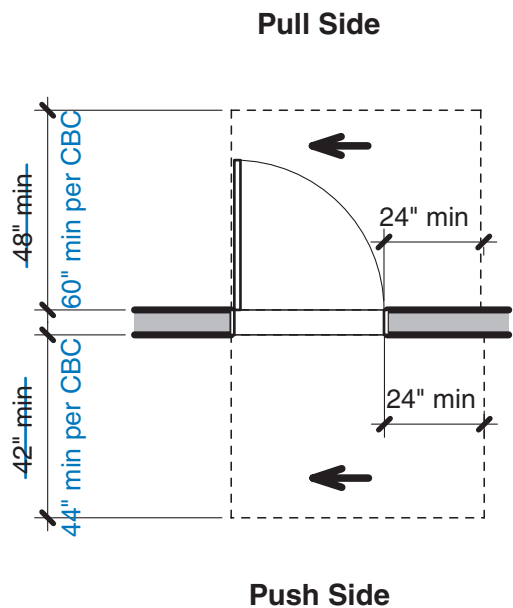
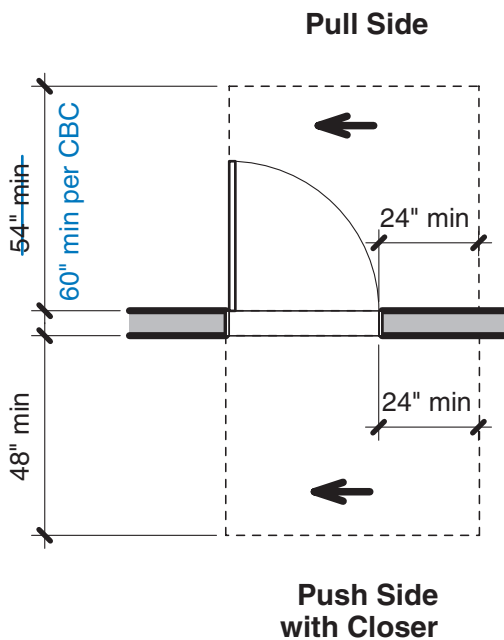


| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | Items in blue are where California provides greater access | Outside of California ignore blue text and the blue ~~[strikeout]~~ line itself—everything in black pertains |

Hinge Approach



Latch Approach



SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

- 302 Floor or Ground Surfaces
- 305.2 Clear Floor or Ground Space – Floor or Ground Surfaces
- 404.2.2 Doors, Doorways, and Gates – Manual Doors, Doorways, and Manual Gates – Double-Leaf Doors and Gates
 - 404.2.4 Maneuvering Clearances
 - 404.2.4.3 Recessed Doors and Gates
 - 404.2.4.4 Floor or Ground Surface
 - 404.3.1 Automatic and Power-Assisted Doors and Gates – Clear Width
 - 404.3.2 Maneuvering Clearance
 - 404.3.5 Controls
- 604.8.1.2 Water Closets and Toilet Compartments – Toilet Compartments – Wheelchair Accessible Compartments – Doors

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

- 11B-302 Floor or Ground Surfaces
- 11B-305.2 Clear Floor or Ground Space – Floor or Ground Surfaces
- 11B-404.2.2 Doors, Doorways, and Gates – Manual Doors, Doorways, and Manual Gates – Double-Leaf Doors and Gates
 - 11B-404.2.4 *Maneuvering Clearances*
 - 11B-404.2.4.3 *Recessed Doors and Gates*
 - 11B-404.2.4.4 *Floor or Ground Surface*
 - 11B-404.3.1 *Automatic and Power-Assisted Doors and Gates – Clear Width*
 - 11B-404.3.2 *Maneuvering Clearance*
 - 11B-404.3.5 *Controls*
- 11B-604.8.1.2 *Water Closets and Toilet Compartments – Toilet Compartments – Wheelchair Accessible Compartments – Doors*

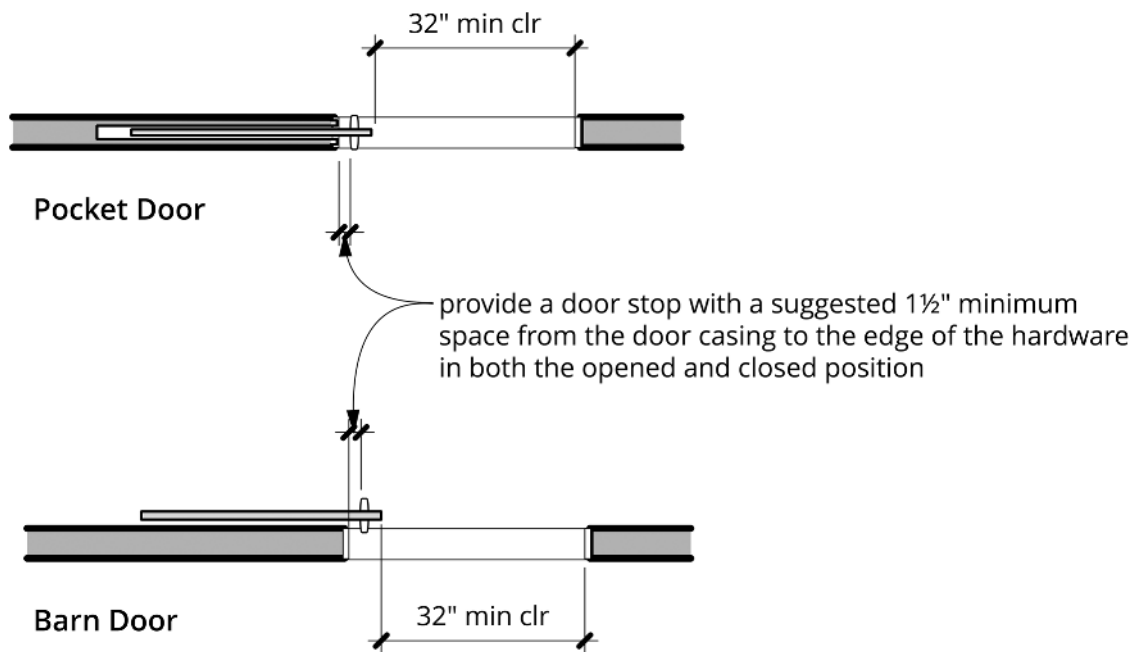
DOORS & GATES – OPENING CONFIGURATIONS

General Notes

- All openings have 32" minimum clear width in the open position, including folding, sliding, and pocket doors – measure from the 90° open position if hinged or if folding, from the face of the door to the door stop
- For folding, sliding, and pocket doors, the door hardware should be fully exposed on both sides in the open position and graspable without hitting the door casing

Since sliding and pocket door hardware needs to be fully exposed on both sides in both open and closed positions, provide a suggested minimum amount of 1½" clear between the hardware and the door casing on both sides so that it is easily graspable. Provide a door stop to leave this amount clear. The door and its opening will need to be made larger than the minimum and most likely at least 5" wider than the minimum required clear opening width depending upon the width and placement of the door pull.

Sliding Door Hardware



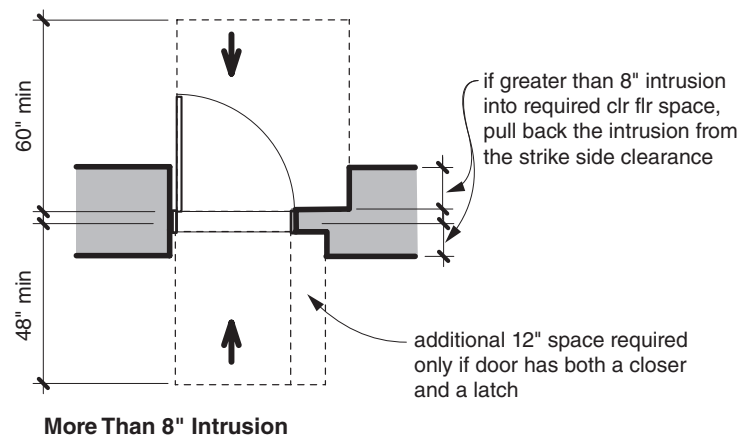
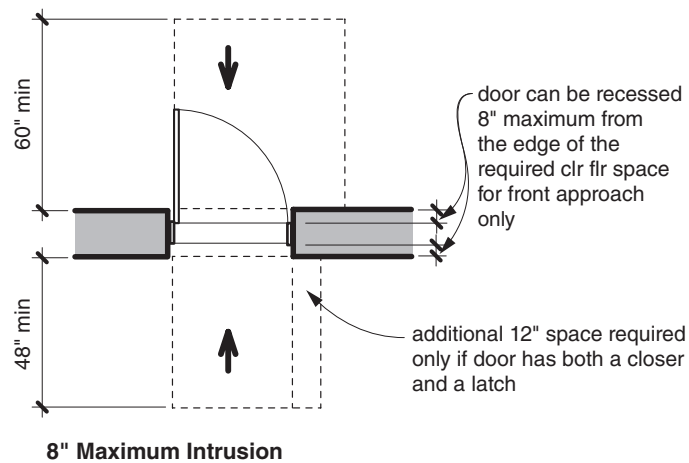
Recessed Doors/Gates

- An intrusion into the door required clear floor space can project 8" maximum on the strike side, measured from the face of the door for forward approach only

- If the intrusion is over 8" deep on the strike/latch side, it would need to be removed to allow for 12" clear on the push side with both a closer and latch, and on the pull strike/latch side, regardless of whether there is a closer or latch, to allow for 18" clear [or 24" on the exterior pull side per CBC]

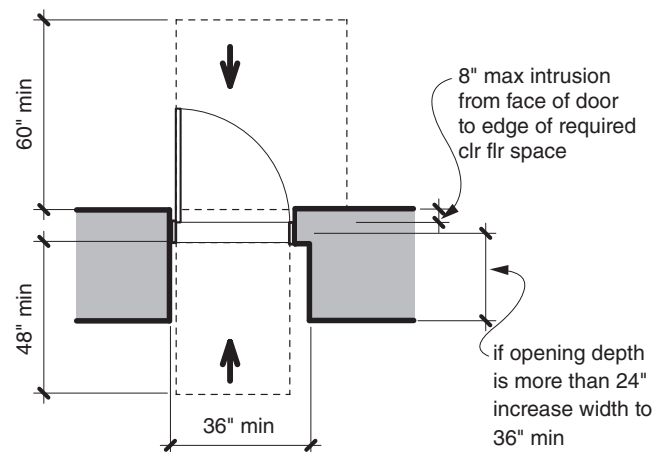
| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | Items in blue are where California provides greater access | Outside of California ignore blue text and the blue [strikeout] line itself—everything in black pertains |

Partially Recessed Doors/Gates



Recessed doors with front approach can be recessed 8" maximum from the required clear floor space measured from the face of the door - if greater than 8" the intruding object needs to be pulled back to allow required strike side clearances for forward approach

Recessed Doors/Gates



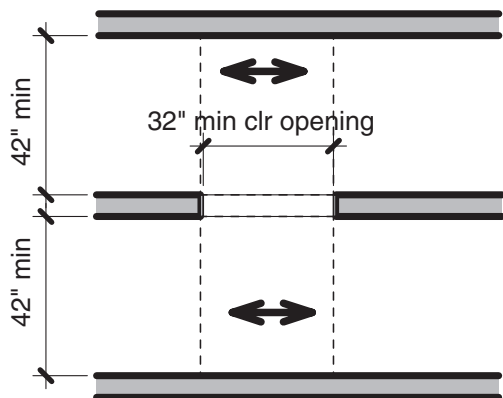
Openings Without Doors

- Openings without doors having less than 36" clear width are required to have 42" minimum clear depth on both sides for the full opening width for side approach, or 48" minimum deep for front approach

Doors In Series

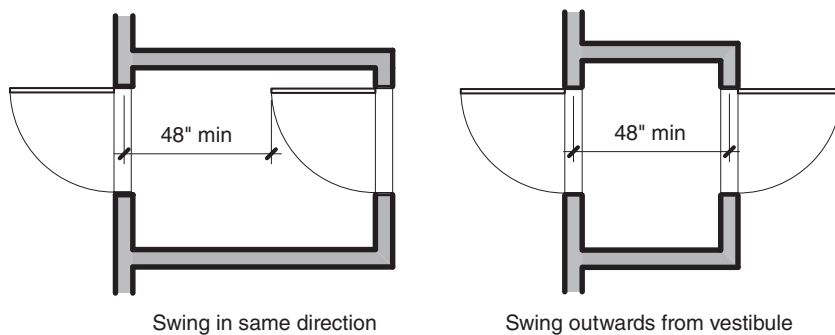
- Hinged or pivoted doors in series require 48" minimum between any part of their swing to the face or edge of the door depending upon the swing direction

Openings without Door

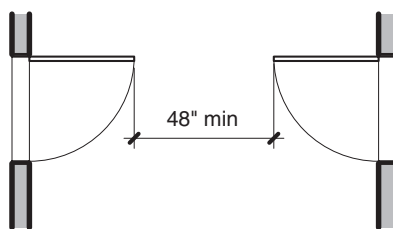


Openings without doors less than 36" wide with side approach, have 42" minimum clear depth on each side of the opening for the full opening width

Doors in Series



Vestibule Doors



Doors on Opposite Walls

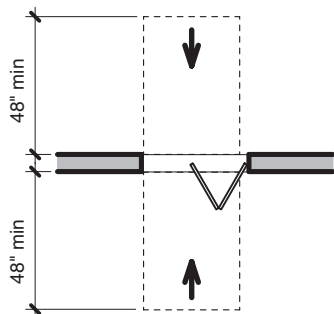
Sliding, Pocket, & Folding Doors

- For front approach, provide a minimum clear depth of 48" on both sides of the opening and for the full width of the opening
- For pocket or hinge side approach, provide a minimum clear depth of 42" on both sides of the opening

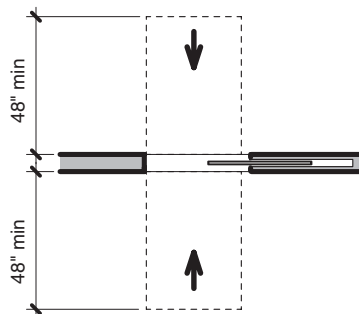
for the full width of the opening, and extending it an additional 22" on both pocket/hinge sides

- For latch or strike side approach, provide a minimum clear depth of 42" on both sides of the opening for the full width of the opening, and extending it an additional 24" on both strike/latch sides

Sliding & Folding Doors



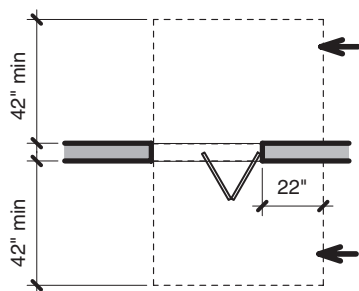
Bi-Fold



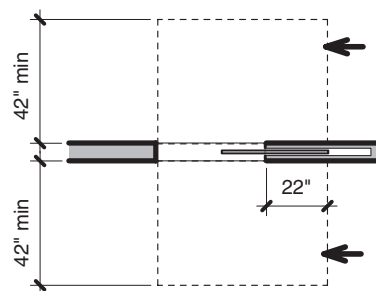
Sliding/Pocket

Front approach has 48" minimum depth on both sides of the door/gate for the full opening width

Front Approach



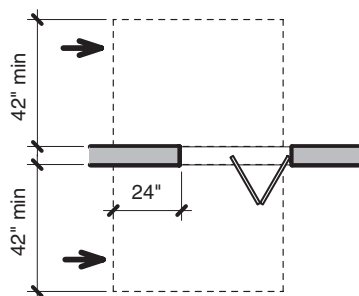
Bi-Fold



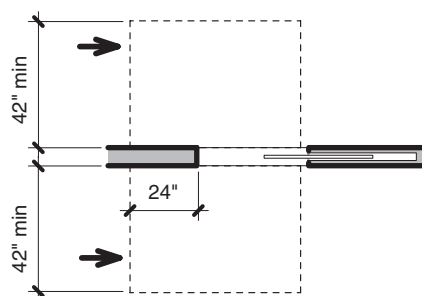
Sliding/Pocket

Hinge or Pocket Side approach has 42" minimum depth on both sides of the door for the full opening width plus an additional 22" on the pocket/hinge side

Hinge or Pocket Side Approach



Bi-Fold



Sliding/Pocket

Latch Side approach has 42" minimum depth on both sides of the door for the full width of the opening plus an additional 24" on the latch/strike side

Latch Side Approach

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

404.2.3 Doors, Doorways, and Gates – Manual
Doors, Doorways, and Manual Gates – Clear Width

404.2.4.2 Maneuvering Clearances – Doorways with-
out Doors or Gates, Sliding Doors, and Folding Doors

404.2.4.3 Recessed Doors and Gates

404.2.6 Doors in Series and Gates in Series

404.2.7 Doors and Gate Hardware

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

11B-404.2.3 Doors, Doorways, and Gates – Manual
Doors, Doorways, and Manual Gates – Clear Width

11B-404.2.4.2 Doorways without Doors or Gates,
Sliding Doors, and Folding Doors

11B-404.2.4.3 *Recessed Doors and Gates*

11B-404.2.6 Doors in Series and Gates in Series

11B-404.2.7 *Doors and Gate Hardware*

POWER-ASSIST, LOW-ENERGY, & AUTOMATIC DOORS & GATES

General Notes

How do you differentiate between the different types of powered doors?

Automatic Power-Operated doors are not so much an issue—basically, sensors cause them to open automatically when you approach and close afterwards, without any action on your part, but *Low-Energy* and *Power-Assist* doors are another matter and require a knowing act.

A door with a button or switch, if the door automatically opens when the button is pushed, is a *Low-Energy Powered* door. If you push the button and then have to manually push/pull the door, then you have a *Power-Assist* door. A *Power-Assist* door is powered by a manual control or mechanism that reduces the operating force of a self-closing door when the opening force is greater than 5 lbs. and is not frequently used.

- Power-operated doors comply with Builders Hardware Manufacturers Association (BHMA) A156.10, (1999 edition) and low-energy and power-assist comply with A156.19 (1997 or 2002 edition) including signage requirements, rails, and sensing devices [and where vertical actuation bars are provided, the operable parts are a minimum of 2" in width with an ISA and located at 5" maximum AFF and the top at 35" minimum, and if push plates are provided there are 2, either a 4" square or diameter with an ISA, and centered at 7" to 8" AFF with the upper centered at 30" to 44" AFF per CBC]
- Opening width of power-operated, low-energy, and power-assist doors in both the power-on and power-off modes is 32" minimum clear, measured from face of door in the 90° open position, or the fully retracted position for sliding doors to the door stop depending upon the occupancy
- The minimum clear width of 32" for power-operated doors is based on clear opening width provided by [both leaves in the open position] [one leaf in the 90° open position per CBC]
- All required maneuvering clearances comply with manual doors
- Doors without stand-by power serving an accessible means of egress system have maneuvering clearances provided, unless the door remains open in the power-off mode

- Thresholds are ½" maximum with ¼" vertical and from ¼" to ½" at a 1:2 slope maximum
- Exterior doors located at a single location leading to the same space, if one powered door is 5 lbs. maximum out of 8 leaves or fraction of 8 leaves, then the other doors can have 8.5 lbs. maximum operating force – the 5 lb. door is located closest to the accessible route and marked with an ISA on or adjacent to the accessible leaf per CBC
- Manually operated controls for both power-assist and low-energy doors have a 30" × 48" clear floor space beyond the arc of the door swing, and are operable with one hand without tight grasping, pinching, or twisting of the wrist, and have an operating force of 5 lbs. maximum

Power-Assist Swinging Doors per BHMA

- Power-assist doors and gates require maneuvering clearances
- A power-assist door requires the push or pull force to be 15 lbs. maximum
- The switch mechanism is used to reduce the opening operating force and the door is self-closing
- The power-assist operated door sign is mounted at 50" ±12" AFF to the centerline and visible from both sides with ⅝" minimum height white lettering on a blue background
- If a separate switch is used to activate the door, place a sign on both sides stating EASY OPEN DOOR – ACTIVATE SWITCH THEN OPEN DOOR
- If door motion is used to activate the door, place a sign on one side stating EASY OPEN DOOR – PUSH TO OPERATE and on the other side PULL TO OPERATE
- If a remote sensor or device is used to activate, place a sign on both sides stating EASY OPEN DOOR – POWER ASSISTED

NOTE

A *power-assist* door is operated by either pushing or pulling the door. A separate mechanism can be activated that puts the door in the power-assist mode, which is used to lessen the opening force of the door. The door closes automatically.

| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | Items in blue are where California provides greater access | Outside of California ignore blue text and the blue [strikeout] line itself—everything in black pertains |

Low-Energy Power-Operated Doors per BHMA

- A low-energy door can be either a door that both opens and closes automatically when a mechanism is activated, or one that only opens automatically when a mechanism is activated
- Force to stop a door from opening or closing is 15 lbs. maximum
- A low-energy door remains fully open for 5 seconds minimum
- During a power failure, the low-energy door requires 15 lbs. maximum of operating force to release the latch, 30 lbs. to break the inertia, and 15 lbs. to fully open the door
- The low-energy operated door sign is a 6" minimum diameter with $\frac{5}{8}$ " minimum height black lettering on a yellow background, mounted at 50" $\pm$ 12" AFF to the centerline and visible from both sides saying AUTOMATIC CAUTION DOOR
- If a separate switch is used to activate the door, place another sign on both sides of the door stating ACTIVATE SWITCH TO OPERATE in white letters on a blue background
- If door motion is used to activate the door, place a sign on one side of the door saying PUSH TO OPERATE and on the other side, PULL TO OPERATE with white lettering on a blue background

NOTE

A *low-energy* door has two varieties: one, a power-open door, which has a powered mechanism that opens the door only when the mechanism is activated and is closed by other means; and the second, is a power-operated door that automatically opens and closes from a powered actuating signal

Automatic Doors (Power-Operated) per BHMA

- Force for both the push and pull sides of interior automatic power-operated sliding doors or gates is 5 lbs. maximum and 15 lbs. maximum in case of a power outage per BHMA
- Break out openings for power-operated swinging or sliding doors without stand-by power that are part of a means of egress, have a 32" minimum clear opening in emergency mode, unless compliant manual doors are located in the same area
- Automatic power-operated swinging doors require two guide rails or walls on the pull side of the door that project at a minimum to the leading edge of the widest door in the open position; if it is an egress door, add an additional 55"
- Automatic power-operated folding doors require one guide rail on the pull fold side that projects out beyond the leading edge of the door either 5" or 12" minimum, depending upon approach and direction of travel
- Guide rails are 30" minimum above grade with either a second rail or panel with its leading edge at 27" maximum above grade
- The rail has a clearance of 2" minimum to 6" maximum to the door
- Guide rails are either mounted on the jamb or are floor-mounted 2" maximum from the jamb

- All swinging, sliding, and folding automatic doors serving egress and ingress have signs that are a 6" minimum diameter with ½" minimum height black lettering on a yellow background, mounted on the door at 58" ± 5" AFF to the centerline and visible from both sides, saying AUTOMATIC CAUTION DOOR

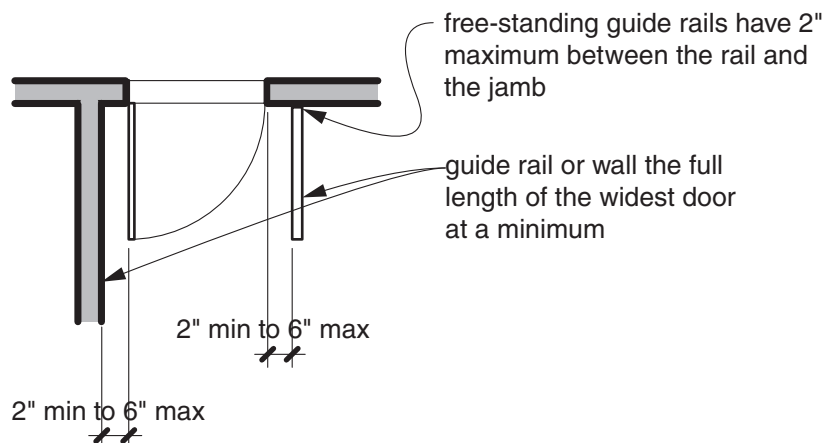
- There are other signage requirements depending upon whether it is a swinging, sliding, or folding door

Note Basically, a fully *automatic power-operated* door opens when you approach and closes afterwards, without having to do anything or touch the door.

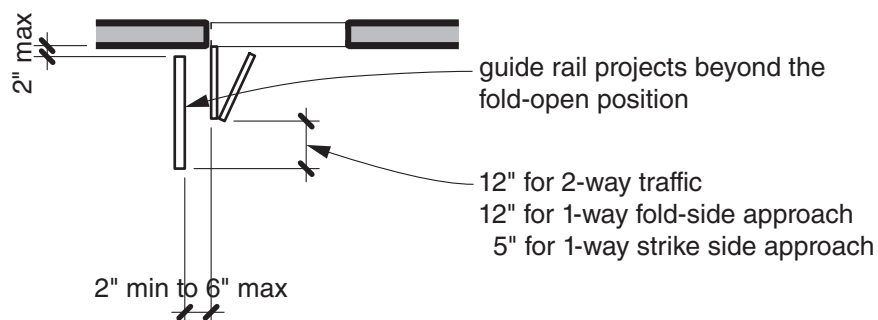
Automatic Door Sign



Rails for Power-Operated Doors



Power-Operated Swinging Door



Power-Operated Folding Door

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

404.2.4 Doors, Doorways, and Gates – Manual
Doors, Doorways, and Manual Gates – Maneuvering
Clearances

404.2.9 Door and Gate Opening Force

404.3 Automatic and Power-Assisted Doors and
Gates

404.3.5 Controls

BHMA Sources:

A156.10-1999 ANSI/BHMA For Power Operated
Pedestrian Doors

6 Guide Rails

11 Signage

A156.19-2002 ANSI/BHMA For Power Assist and
Low Energy Power Operated Doors

3 Requirements for Swinging Power-Assist Doors

6 Signs

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

*11B-404.2.4 Doors, Doorways, and Gates – Manual
Doors, Doorways, and Manual Gates – Maneuvering
Clearances*

11B-404.2.9 except Door and Gate Opening Force

*11B-404.3 Automatic and Power-Assisted Doors and
Gates*

11B-404.3.5 Controls

DOORS, GATES, & WINDOWS – SPECIFIC TYPES & USES

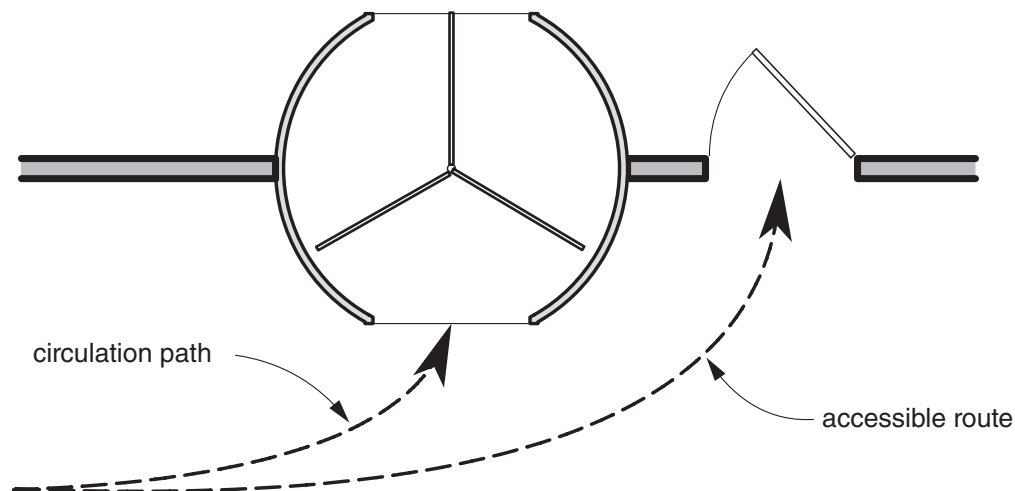
Security & Restricted Doors & Gates

- If turnstiles are used for crowd control, an unlocked gate is located in the immediate vicinity
- If security barriers obstruct the circulation path, provide an accessible route adjacent that allows the person to keep visual contact with their personal items
- Manual entries that are latched and always controlled by an attendant are not required to comply with door hardware, closing speed, and operating force [and have a sign posted stating ENTRY RESTRICTED AND CONTROLLED BY SECURITY PERSONNEL per CBC]
- If all entries are restricted, [one entry is required to be fully accessible] [all are still required to be accessible per CBC]
- If a service entry is the only entry to a building or tenant space, then that entry is to be accessible
- In existing buildings, the service entry is not the only accessible entry unless it is also the only building entry per CBC
- Access gates in fences surrounding pools, hot tubs, and spas have the operable part of the latch mechanism of a self-latching device at 54" maximum above grade, if it is not also self-locking and operated by a key, electronic opener, or combination lock

Doors & Gates – Other Uses

- All doors providing user passage in transient lodging guest rooms and student housing sleeping rooms that have mobility features are fully accessible
- Transient lodging guest room doors providing user passage into and within guest rooms that are not designated mobility feature rooms comply with clear width requirements, have no projections below 34" into the clear opening width, 4" maximum projection between 34" and 80" AFF, and 78" AFF minimum clear to door closers and door stops, with the exception of the non-mobility room shower and sauna doors
- One entry minimum, at licensed medical and long-term care facilities where the period of stay may be over 24 hours, has a canopy or roof overhang covering the route and the accessible passenger drop-off and loading area to the entry per CBC
- In self-storage facilities, only the storage spaces required to be accessible are located on an accessible route and are required to have accessible doors, as well as all common and public spaces
- Powered revolving doors, gates, and turnstiles are not part of an accessible route, although they can be considered part of a common use circulation path

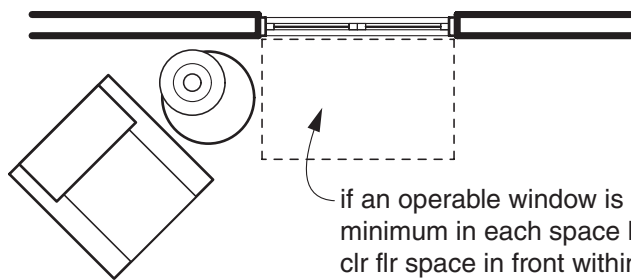
Revolving Doors & Accessible Route



| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | Items in blue are where California provides greater access | Outside of California ignore blue text and the blue [strikeout] line itself—everything in black pertains |

- Mobility feature dwelling units in both multi-family residential facilities built by or on behalf of a public entity and in social service center establishments, as well as student housing that includes a sleeping room with mobility features, have all doors providing user passage comply with door size, clear floor space, thresholds, door hardware, operating force, and door surface requirements

Operable Window Clear Floor Space



if an operable window is provided, one minimum in each space has a 30" x 48" clr flr space in front within both mobility feature guest rooms and student housing sleeping rooms

Windows

- Operable windows in accessible rooms operated by the occupants, including mobility feature guest rooms in transient lodging, and mobility feature student housing sleeping rooms, have one minimum window, and all windows required by the administrative authority, to be operable and accessible, which includes compliant reach ranges, clear floor space, operation, and on an accessible route—this is not applicable to residential dwelling units or to social service center establishment sleeping rooms
- Windows located in transient lodging guest rooms and student housing sleeping rooms that are non-mobility feature are not required to comply
- Mobility and communication feature dwelling units in multi-family residential facilities built by or on behalf of a public entity are exempt from the window requirements
- Non-mobility transient lodging guest rooms are exempt from the window requirements

Consideration should be given to the operation of window coverings, and the window itself, in order to make accessible for opening and closing, particularly in all transient lodging guest rooms—a vertical rod would not be considered accessible since it requires tight grasping, pinching, and twisting of the wrist.

- Counters or teller windows with security glazing separating the public from a worker have a method to facilitate voice communication, such as a grille, slats, baffles, intercom, telephone, or other assistive listening device
- If a telephone is provided at security glazing, it complies with volume control requirements
- If an assistive listening device is provided at security glazing, an International Symbol of Access for Hearing Loss is provided

International Symbol of Access for Hearing Loss



SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

206.4.5 *excep* Accessible Routes – Entrances – Tenant Spaces

206.4.7 Restricted Entrances

206.4.8 Service Entrances

206.5.3 Doors, Doorways, and Gates – Transient Lodging Facilities

206.5.4 Residential Dwelling Units

206.8 Security Barriers

225.3 Storage – Self-Service Storage Facilities

229.1 Windows – General

404 Doors, Doorways, and Gates

404.1 *excep* General

404.2.1 Manual Doors, Doorways, and Manual Gates – Revolving Doors, Gates, and Turnstiles

404.2.3 Clear Width

404.2.7 *excep* 2 Door and Gate Hardware

404.3.7 Automatic and Power-Assisted Doors and Gates – Revolving Doors, Revolving Gates, and Turnstiles

704.3 Telephones – Volume Control Telephones

806.2 Transient Lodging Guest Rooms – Guest Rooms With Mobility Features

904.6 Check-Out Aisles and Sales and Service Counters – Security Glazing

Advisory 904.6 Security Glazing

ADA Implementing Regulations:

§ 35.151 (e) New Construction and Alterations – Social Service Center Establishments

§ 36.406 (d) Standards for New Construction and Alterations – Social Service Center Establishments

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

11B-206.4.5 *excep* Accessible Routes – Entrances – Tenant Spaces

11B-206.4.7 Restricted Entrances

11B-206.4.8 Service Entrances

11B-206.4.10 Medical Care and Long-Term Care Facilities

11B-206.5.3 Doors, Doorways, and Gates – Transient Lodging Facilities

11B-206.5.4 Residential Dwelling Units

11B-206.8 Security Barriers

11B-225.3 Storage – Self-Service Storage Facilities

11B-229.1 Windows – General

11B-404 Doors, Doorways, and Gates

11B-404.1 excep General

11B-404.2.1 Manual Doors, Doorways, and Manual Gates – Revolving Doors, Gates, and Turnstiles

11B-404.2.3 Clear Width

11B-404.2.7 *excep* 2 Door and Gate Hardware

11B-404.3.7 Automatic and Power-Assisted Doors and Gates – Revolving Doors, Revolving Gates, and Turnstiles

11B-704.3 Telephones – Volume Control Telephones

11B-806.2 Transient Lodging Guest Rooms – Guest Rooms With Mobility Features

11B-904.6 Check-Out Aisles and Sales and Service Counters – Security Glazing

MACHINES, CONTROLS, & OTHER ITEMS

General Notes

- All accessible controls such as switches, circuit breakers, convenience outlets, environmental and appliance controls, plumbing fixture controls, security and intercom systems, and operable parts on accessible devices have a clear floor space; are within reach range; are operable with one hand without tight grasping, pinching, or twisting of the wrist; and require 5 lbs. maximum force, unless they are dedicated for specific elements, or for service or maintenance personnel use only, or have specific exemptions
- If redundant controls are provided in a space for a single element, one control is not required to be accessible, with the exception of light switches
- Electrical and communication receptacles serving a dedicated use do not need to be accessible
- If two or more outlets are located above kitchen counters that are uninterrupted by a sink or appliance, ~~[one does not need to be accessible]~~ **[all are required to be accessible per CBC]**
- Floor outlets and HVAC diffusers are not required to be accessible
- Exercise machines and equipment do not need to be accessible, although one of each type in each area does need to be on an accessible route
- One minimum of each type of vending machine, depository, change machine, and fuel dispenser is accessible at each location, with compliant reach range, clear floor space, and operation, with the exception of drive-up depositories
- Gas pump nozzles are not required to comply with 5 lbs. maximum operating force
- One minimum of each type of ATM, self-serve fare vending, collection, or adjustment machine provided is accessible at each location, with clear floor space, reach range, and has the same degree of privacy as a non-accessible device
- ATM and fare machines either have a CLEAR or CORRECT key, or each operable part is differentiated by sound or touch without activation
- **Where 2 or more ATMs or fare machines are provided at a single location 50% minimum comply**

with clear floor space, operation and operating force, reach range, degree of privacy, speech output, user control, receipts, input device, display screen, and Braille; the remaining machines comply with basically the same requirements, with the exception of the screen angle and clear floor space per CBC

- Where bins and waste receptacles are provided at ATMs and fare machines, 1 minimum of each type is accessible
- All point of sale (POS) devices are operable with one hand, without tight grasping, pinching, or twisting of the wrist; have 5 lbs. maximum operating force; meet screen character requirements; have instructions in Braille; if a video touch screen exists, it also includes a tactilely discernible numeric keypad or equivalent other technology; and each operable part is either differentiated by sound or touch without activation, or a CLEAR or CORRECT key is provided per CBC
- If POS devices are located at accessible check stands or sales/service counters, then they also comply with clear floor space and reach range requirements per CBC
- Interior mailboxes have 5% with one minimum per type accessible, with compliant reach ranges, clear floor space, and operation
- Mailboxes in multi-family residential facilities built by or on behalf of a public entity, have one accessible with compliant reach ranges, clear floor space, and operation for each mobility dwelling unit **[and for each adaptable unit per CBC]**

Display Screens & Input

- Display screens are visible from a point 40" AFF centered on the clear floor space in front of the equipment, except for drive-up ATMs and fare machines
- **The maximum heights of display screens measured to the centerline are 34" AFF if the screen is horizontal up to a slope of 30°; 44" AFF if the display screen is between 30° and 60°; and 52" AFF if the display screen is 60° to vertical per CBC**

| Items in black are where ADAS provides for greater access or where ADAS and CBC are equivalent | **Items in blue are where California provides greater access** | Outside of California ignore **blue text** and the blue ~~[strikeout]~~ line itself—everything in black pertains |

- Drive-up ATMs and fare machines do not require clear floor space or compliant reach ranges
- Input keyboard devices are arranged in a 12-key ascending (the number one key on the top) or descending (number one key on the bottom) telephone keypad layout, with the number 5 key tactilely distinct from other keys; keys not on the active display areas are raised
- Function keys should contrast visually with background surfaces, and character keys contrast with the characters or symbols on the keys themselves, with a light-on-dark or dark-on-light visual contrast
- Function key surfaces have tactile symbols of a raised circle for enter/proceed, a raised left arrow for clear/correct, a raised letter X for cancel, a raised + or – sign for add/decrease value, which do not need to contrast with their background
- Display screen characters are sans serif and $\frac{3}{16}$ " minimum height based on the uppercase letter I, and contrast with their background with either a light-on-dark or dark-on-light contrast [including POS devices per CBC]
- If no CLEAR or CORRECT keys exist, each operable part is differentiated by sound or touch without activation, except drive-up devices [including POS devices per CBC]
- For POS devices, if the keypad is non-tactile or consists of a video touch screen, it is also required to have a tactilely discernible keypad or other equivalent technology per CBC
- Braille instructions for initiating speech mode are provided
- There are further requirements for speech output and Braille instructions

Security Glazing & 2-Way Communication

- Where security glazing is located at counters, separating the public from personnel, facilitate voice communication by means of a grille, slats, baffles, intercoms, or telephone handset devices
- If telephone handset devices are used, they have volume controls and a cord of a 29" minimum length, and display the International Symbol of Volume Control Telephone

NOTE Handsets may be more difficult to reach for some people, and a different method to facilitate voice communication might be preferred

- Two-way communication for the purpose of gaining admittance to a building or restricted area is to have both visible and audible signals, and the visible signal has a sign designating the meaning of the signal
- If an assistive listening device is used, it has signage with the International Symbol of Access for Hearing Loss with appropriate information on its use
- If multi-family residential facilities built by or on behalf of a public entity have a communication system between the public entry and the dwelling unit, both sides have the capability to support both voice and TTY

International Symbols of Access



Volume Control Telephone



Access for Hearing Loss



TTY

Fire Alarms & Emergency Signage

- Fire alarm systems comply with NFPA 72 (1999 or 2002 edition) and [ADA-702.1] [11B-702.1 per CBC]

- Public and common use areas with an alarm system having audible alarms also have visible alarms, [including restrooms, corridors, and lobbies per CBC]
- Employee work areas with audible alarms also have wiring for future visible alarms
- Transient lodging guest rooms with communication features have both visible and audible alarms complying with NFPA 72 Section 4-3 and 4-4 of the 1999 edition, or 7-4 and 7-5 of the 2002 edition [which are activated by room smoke, building fire alarm system, and carbon monoxide per CBC]
- In multi-family residential facilities built by or on behalf of a public entity, the dwelling units with communication features have the system wiring extended within the unit near the unit's smoke detector system, and if alarm appliances are provided within the unit, they are activated when the building's alarm is activated, and the same device can be used for the unit smoke alarm [and the provided carbon monoxide alarms per CBC]
- Existing facilities do not require visible alarms until the existing system is replaced, or a new system is installed
- Visual characters are not required to comply with height AFF for floor exit signs or floor exit plans with emergency procedures per CBC
- Floor exit plans are not required to comply with character height, although it is preferable to have the text at 5/8" minimum height on the plans with upper/lower case per CBC

NOTE

ACCESSIBLE MEANS OF EGRESS

An *accessible means of egress* is a continuous way of egress travel from within a building that provides an *accessible* route to an area of refuge, a horizontal exit, and to the public way. This is defined in the 2000, 2001 Supplement, and the 2003 International Building Code (IBC), as accepted by the ADA Standards, and allows the use of exit stairways, platform lifts, and evacuation elevators, along with horizontal exits and areas of refuge. Note that proportional spending for *path of travel* does not apply to an *accessible means of egress system*, unless that portion is also the approach to an altered area.

Accessible Means of Egress. A continuous and unobstructed way of egress travel from any point in a building or facility that provides an accessible route to an area of refuge, a horizontal exit, or a public way.

Controls

- All controls and devices, including coin slots, are operable with one hand; do not require tight grasping, pinching, or twisting of the wrist; and require 5 lbs. maximum operating force
- Controls are viewed and operated from a 30" × 48" level clear floor space—unless located in an alcove where additional space is required—and are within compliant reach range
- Each accessible machine or control has one full unobstructed side of its clear floor space adjoining an accessible route, or another clear floor space, or overlapping the accessible route, if allowed
- Controls used only by service or maintenance personnel, as well as dedicated electrical or communication receptacles, are exempt
- Light switches and electrical receptacles are within reach range and 15" minimum to 48" maximum AFF [measured to the bottom and top of the receptacle box for the switch or outlet if the electrical is on circuits of 30 AMP maximum per CBC]

SOURCES – RELEVANT CODES AND STANDARDS

2010 ADA Sources:

106.5 Definitions – Defined Terms – Accessible Means of Egress
205.1 Operable Parts – General
215 Fire Alarm Systems
 215.3 Employee Work Areas
220 Automatic Teller Machines and Fare Machines
228.1 Depositories, Vending Machines, Change Machines, Mail Boxes, and Fuel Dispensers – General
 228.2 Mail Boxes
230 Two-Way Communication Systems
305 Clear Floor or Ground Space
 305.6 Approach
308 Reach Ranges
309 Operable Parts
702 Fire Alarm Systems
703.7.2.3 Signs – Symbols of Accessibility – Symbols – Volume Control Telephones
 703.7.2.4 Assisted Listening Systems
704.3 Telephones – Volume Control Telephones
707 Automatic Teller Machines and Fare Machines
 707.3 Operable Parts
 707.4 Privacy
 707.6 Input
 707.7 Display Screen
 707.7.1 Visibility
708.1 Two-Way Communication Systems – General
 708.2 Audible and Visual Indicators
 708.3 Handsets
 708.4 Residential Dwelling Unit Communication Systems
809.5 Residential Dwelling Unit – Residential Dwelling Units with Communication Features
 809.5.1 Building Fire Alarm System
 809.5.2 Residential Dwelling Unit Smoke Detection System
 809.5.3 Interconnection

2016 CBC Sources:

(Sources shown in blue italics differ from ADA)

907.5.2.1 Fire Alarm and Detection Systems – Occupant Notification Systems – Alarm Notification Appliances – Audible Alarms
 907.5.2.3 Visible Alarms
11B-205.1 Operable Parts – General
11B-215 Fire Alarm Systems and Carbon Monoxide Alarm Systems
 11B-215.3 Employee Work Areas
11B-220.1 Automatic Teller Machines, Fare Machines, and Point-of-Sale Devices – Automatic Teller Machines and Fare Machines
 11B-220.2 Point-of-Sale Devices
11B-228.1 Depositories, Vending Machines, Change Machines, Mail Boxes, and Fuel Dispensers, and Electric Vehicle Charging Stations – General
 11B-228.2 Mail Boxes
11B-230 Two-Way Communication Systems
11B-305 Clear Floor or Ground Space
 11B-305.6 Approach
11B-308 Reach Ranges
11B-309 Operable Parts
11B-702 Fire Alarm Systems
11B-703.5.5 except Signs – Visual Characters – Character Height
 11B-703.5.6 excepts 2, 3 Height from Finished Floor or Ground
11B-703.7.2.3 Signs – Symbols of Accessibility – Symbols – Volume Control Telephones
 11B-703.7.2.4 Assisted Listening Systems
11B-704.3 Telephones – Volume Control Telephones
11B-707 Automatic Teller Machines, Fare Machines and Point-of-Sale Devices
 11B-707.3 Operable Parts
 11B-707.4 Privacy
 11B-707.6 Input

904.6 Check-Out Aisles and Sales and Service Counters – Security Glazing

Advisory 904.6 Security Glazing

11B-707.7 Display Screen

11B-707.7.1 Visibility

11B-707.9 Point-of-Sale Devices

11B-708.1 Two-Way Communication Systems – General

11B-708.2 Audible and Visual Indicators

11B-708.3 Handsets

11B-708.4 Residential Dwelling Unit Communication Systems

11B-809.5 Residential Dwelling Units – Residential Dwelling Units with Communication Features

11B-809.5.1 Building Fire Alarm System

11B-809.5.2 Residential Dwelling Unit Smoke Detection System and Carbon Monoxide Detection System

11B-809.5.3 Interconnection

11B-904.6 Check-Out Aisles and Sales and Service Counters – Security Glazing

