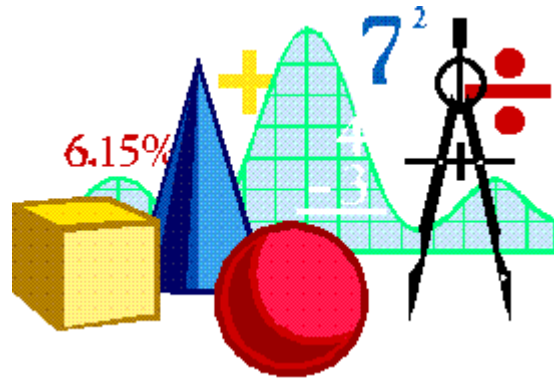


# BASIC DIMENSIONS - A QUICK LOOK



It's important to know the basic dimensional tolerances for compliance with the Americans with Disabilities Act. The ADA Accessibility Guidelines Standards for Accessible Design ([www.access-board.gov](http://www.access-board.gov)) give complete information for applying these basics, as well as scoping requirements for new construction. These are 2010 ADAAG Standards. Facilities in compliance with the 1991 standards do not need to comply with the newer standard unless renovated. Any significant differences are noted below.

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## WHEELCHAIR SPACE ALLOWANCES AND REACH RANGES:

- **Clear width** - 36" (915 mm) continuously and 32" (815 mm) at a point (doorway, etc.)
  - Width for passing - 60" (1525 mm) minimum.
  - **Turning space** - 60" (1525 mm) diameter minimum.
  - **Clear floor space** - 30" (760 mm) x 48" (1220 mm) minimum for stationary wheelchair.
  - **Forward and side reach** - 48" (1220 mm) maximum high reach, 15" (380 mm) minimum low reach. [1991 ADAAG high reach standard was 48" forward reach and 54" side reach]
  - Reach over an obstruction - Varies, see ADAAG.
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## SUMMARY OF THE BASICS:

*NOTE: AFF means Above Finished Floor*

**Remember, these dimensions are the minimum for new construction!**

- 36" (915 mm) clear width for wheelchair
- 60" (1525 mm) clear turning diameter for wheelchair
- 30" (760 mm) x 48" (1220 mm) clear floor space for wheelchair
- 15" (380 mm) to 48" (1220 mm) mounting height to operable part of switches, handles, dispensers, controls
- 80" (2030 mm) high clear headroom
- 27" (685 mm) high clear knee space
- 28" (710 mm) to 34" (865 mm) high table and counter tops

- 32" (815 mm) wide clear openings for doors, passages
- 96" (2440 mm) wide parking with 60" (1525 mm) wide access aisle

[96" + 96" (2440 mm + 2440 mm) for van] Note: Aisle may be shared by two spaces. Alternative van space is 132" (3350 mm) + 60" (1525) access aisle so that car and van can share an access aisle.

- 48" (1220 mm) - 60" (1525 mm) high to baseline of tactile signage
- 34" - 38" (865 mm - 965 mm) AFF (Above Finished Floor) for handrails
- 33" - 36" (840 mm - 915 mm) AFF for grab bars
- All controls, door handles, etc. operable with a closed fist
- Accessible parking maximum slope - 1:50
- Path of travel maximum slope - 1:20
- Ramps, curb cuts maximum slope - 1:12
- Beveling at thresholds, level changes maximum slope - 1:2

**Table for Converting Slope Ratios to Degrees or Percent of Grade.** Refer to this table if you use a tool which measures slope degrees or percent instead of slope ratios.

*slope ratio = degrees = percent*

1:50 = 1.1 = 2% *maximum for accessible parking & cross slopes.*

1:20 = 2.8 = 5% *maximum for sidewalks, walkways*

1:12 = 4.7 = 8% *maximum for ramps, curb cuts*

1:10 = 5.7 = 10% *maximum curb cut flared sides*

1:2 = 26.6 = 50% *maximum beveling level changes*

## **ADA ACCESSIBILITY GUIDELINES FOR SPECIFIC ELEMENTS:**

### **Sidewalks (path of travel)**

36" (915 mm) minimum clear width, with passing space of 60" x 60" (1525 mm x 1525 mm) provided every 200' (61 m).

Clear head room of 80" (2030 mm) minimum.

No changes in level greater than ¼" (6.4 mm) without beveling.

### **Protruding objects**

4" (100 mm) maximum for objects projecting from walls with their leading edge between 27" (685 mm) and 80" (2030 mm) AFF.

**Head room** - 80" (2030 mm) minimum for walks and other circulation spaces.

**Carpet** - ½" (13 mm) maximum pile thickness.

**Gratings** - ½" (13 mm) maximum wide spaces in one direction. If elongated, should run perpendicular to main direction of travel.

### **Parking spaces**

96" (2440 mm) minimum wide with 60" (1525 mm) minimum wide access aisle for *accessible* spaces.  
Surface slope not exceeding 1:50.

96" (2440 mm) wide space with 96" (2440 mm) wide access aisle for vans (minimum of one required)  
or 132" (3350 mm) wide space + 60" (1525) access aisle

114" (2895 mm) vertical clearance.

Complying signage mounted so as not to be obscured by a vehicle parked in the space [no dimension stated, we suggest not less than 72" (1830 mm) high.]

### **Curb ramps**

1:12 maximum slope.

1:20 maximum slope for adjacent surfaces.

1:10 maximum slope for flared sides.

36" (915 mm) minimum width.

### **Ramps**

1:12 maximum slope.

30" (760 mm) maximum rise for any run.

36" (915 mm) minimum clear width.

Level landings at top and bottom at least as wide as the ramp and 60" (1525 mm) clear length. [60" x 60" (1525 mm x 1525 mm) if ramp changes direction]

1:50 maximum slope for cross slopes.

### **Handrails**

Ramps with a rise greater than 6" (150 mm) or a horizontal projection greater than 72" must have handrails on both sides.

12" (305 mm) extension parallel to ground top and bottom.

1¼" - 1½" (32 mm – 38 mm) diameter of gripping surface.

1½" (38 mm) clear space between rail and wall.

Top of gripping surfaces mounted 34" - 38" (865 mm - 965 mm) above ramp surface.

Ends of rails rounded or returned smoothly to floor, wall, or post.

### **Stairs**

11" (280 mm) minimum wide treads, uniform riser heights and tread widths.

1½" (38 mm) maximum nosing projection, undersides to be sloped with a minimum angle of 60° from the horizontal.

Complying handrails both sides.

12" (305 mm) horizontal projection of handrail at top; handrail to continue to slope width of one tread plus have 12" (305 mm) horizontal extension at bottom.

### **Elevators**

Hall call buttons - 42" (1065 mm) AFF to centerline.

Hall lantern fixtures - 72" (1830 mm) AFF minimum to centerline.

Door reopening device - 5" (130 mm) AFF and 29" (735 mm) AFF. Car control floor buttons - 48" (1220 mm) AFF maximum (front or side approach.) **[1991 Standard 54" max. side reach, 48" max. front reach]**

Raised letters & Braille.

Car emergency controls - 35" (890) AFF minimum to centerline.

Emergency communication system - 48" (1220 mm) AFF maximum to highest operable part **[See note above]**

Hoistway entrances - floor designations both jambs, 48" (1220 mm) - 60" (1525 mm) AFF to baseline of 2" (50 mm) high characters (raised & Braille).

Car size - 54" (1370 mm) deep by 80" (2030 mm) wide minimum [68" (1725 mm) wide alternate].  
Illumination levels - not less than 5 footcandles.

### **Doors**

32" (815 mm) minimum clear width.

48" (1220 mm) plus width of door swinging into space clear width for two doors in a series.

½" (13 mm) maximum threshold height.

48" (1220 mm) maximum height for door handles, pulls, latches, locks, and other operating devices - operable with closed fist.

3 seconds minimum sweep (closing) period.

5 lb (22.2 N) maximum opening force for interior hinged, sliding, or folding doors.

Opening force for exterior doors reserved

Fire doors to have minimum opening force allowed by appropriate authority.

Automatic and power-assisted doors to comply with ANSI/BHMA A156.10-1985.

### **Drinking fountains**

Spout - 36" (915 mm) AFF maximum to the spout outlet. Flow of water - 4" (100 mm) minimum high.

Clear knee space - 27" (685 mm) minimum between the bottom of the apron and the floor, 30" (760 mm) minimum wide, 17" (430 mm) to 19" (230 mm) deep.

30" (760 mm) wide x 48" (1220 mm) deep clear floor space for forward approach.

Controls at front and operable with closed fist.

### **Water closets (toilets)**

Clear floor space varies by configuration, see ADAAG.

17" - 19" (430 mm - 480 mm) high to top of toilet seat.

Grab bars required - 36" (915 mm) rear grab bar, 42" (1065 mm) side grab bar, Mount side grab bar a max. of 12" from rear wall. From centerline of toilet, rear grab bar should extend 12" toward side wall, 24" toward open side of toilet. Mount both grab bars 33" (840 mm) to 36" (915 mm) AFF.

Flush controls maximum 44" (1120 mm) AFF, mounted on the transfer side of toilet.

Lateral transfer space alongside the toilet – 30" wide x 48" long [**1991 ADAAG allowed sink in transfer space**]

### **Toilet stalls**

Standard stall 60" (1525 mm) wide and 56" - 92" (1420 mm – 2335 mm) deep. See ADAAG for alternate stall sizes, configurations.

Toilet stall doors to comply with door requirements, with handles both inside and outside, mounted 48" (1220 mm) maximum AFF.

### **Urinals**

17" (430 mm) maximum AFF to rim.

30" (760 mm) wide x 48" (1220 mm) deep clear floor space for forward approach.

Flush controls 44" (1120 mm) maximum AFF.

### **Lavatories (sinks)**

34" (865 mm) maximum AFF to rim or counter surface.

29" (735 mm) minimum clear knee space AFF to bottom of apron.

27" (685 mm) minimum clear AFF to bottom of sink bowl.

Clear space 30" (760 mm) wide by 19" (480 mm) deep underneath sinks.

6½" (165 mm) maximum sink bowl depth.

30" (760 mm) wide by 48" (1220 mm) deep clear floor space for forward approach.

Faucets operable with closed fist.

Exposed water supply and drain pipes should be insulated.

**Mirrors** - Bottom edge of reflecting surface 40" (1015 mm) AFF maximum.

**Restroom dispensers**

48" (1220 mm) maximum height AFF [1991 ADAAG 54" max side reach, 48" front reach].

**Fixed storage (cabinets, shelves, closets, drawers, etc.)**

Clear floor space of 30" (760 mm) x 48" (1220 mm) for forward or parallel approach.

Reach ranges apply to *accessible* storage spaces.

Clothes rods or shelves 48" (1220 mm) maximum AFF for forward or side approach. [See note above]

**Controls and operating mechanisms**

30" (760 mm) x 48" (1220 mm) clear floor space for wheelchair approach.

48" (1220 mm) maximum AFF height to highest operable part for forward or parallel approach [See note above]

15" (380 mm) minimum AFF for electrical and communications system receptacles on walls.

All controls and mechanisms to be operable with one hand and not require tight grasping, pinching, or twisting of the wrist, with maximum force of 5 lbf for activation. (*The "closed fist" test for handles and controls: if you can operate the mechanism with one hand, held in a fist, so can a person with limited use of the hands.*)

**Alarms**

Visual signal devices are required in restrooms and general usage areas such as meeting rooms, hallways, lobbies, and any other area for common use.

80" (2030 mm) above the highest floor level within the space or 6" (150 mm) below the ceiling, whichever is *lower*.

No place in any room or space more than 50' (15 m) from visual signal.

See ADAAG for other requirements.

**Signage**

Width-to-height ratio between 3:5 and 1:1; stroke-width-to-height ratio between 1:5 and 1:10.

3" (75 mm) minimum character height for signage mounted overhead.

Letters and numerals to be raised 1/32" (0.8 mm), upper case, and to be 5/8" (16 mm) to 2" (51 mm) in height.

Grade 2 Braille to accompany raised text.

Pictogram field height to be at least 6" (150 mm) high.

Characters and symbols to contrast with background (70% typical)

Signs to be installed on wall adjacent to the latch side of door at 48" (1220 mm) to 60" (1525 mm)

AFF to the centerline of the sign. (Exit signs can be mounted directly on out-swinging doors.)

Accessible elements to be identified with the International Symbol of Accessibility.

**Telephones** - 30" (760 mm) x 48" (1220 mm) clear floor space for wheelchair approach.

Highest operable part to be within reach ranges [48" (1220 mm) AFF max.]

29" (230 mm) minimum cord length. Telephone books within reach range.

See ADAAG for hearing aid compatible, volume control, and text telephone requirements.

**Fixed or built-in seating and tables** - 27" (685 mm) high, 30" (760 mm) wide, and 19" (480 mm) deep knee space required for wheelchairs.

Tops of *accessible* tables and counters to be 28" to 34" ((710 mm to 865 mm) AFF.

**Automated teller machines** - Provide for parallel approach and both forward and side reach. Instructions and all information for use is to be accessible to and independently usable by persons with vision impairments.

**Dressing and fitting rooms** - 60" (1525 mm) diameter clear floor space.

32" (815 mm) wide clear opening.

24" x 48" (610 mm x 1220 mm) bench fixed to the wall along the longer dimension, mounted 17" to 19" (430 mm to 485 mm) AFF.

Full length mirrors, 18" (445 mm) wide by 54" (1370 mm) high mounted to afford a view from the bench.

### **Restaurants and cafeterias**

5%, but not less than one, of fixed tables are to be accessible.

Counters and bars are to have an accessible area, 60" (1525 mm) long.

36" (915 mm) wide clear access aisle to be provided to accessible seating.

Food service lines to be 36" (915 mm) minimum wide, 42" (1065 mm) preferred; tray slides mounted maximum 34" (865 mm) AFF.

Tableware and condiment areas to be within reach ranges. **[2010 standard]**

Vending machines and other equipment to have operable parts within reach ranges. **[Applicable standard depends on whether machine was manufactured since 2010]**

### **INTERNET RESOURCES**

- "Basic Dimensions – A Quick Look," [www.access-by-design.com](http://www.access-by-design.com)
- "Simplifying Signage," [www.access-by-design.com](http://www.access-by-design.com)
- "2010 ADA Standards," [www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf](http://www.ada.gov/regs2010/2010ADAStandards/2010ADAStandards.pdf)