

Accessible Sidewalks and Curb Ramps

Recent Rules Clarify Standards and Guidelines

In the past, engineers designed sidewalks for an agile adult with good vision, hearing, and mobility. Sidewalks for this “standard pedestrian” often limit the movement of disabled and elderly people. Now society recognizes that everyone has the right to use sidewalks. The 1990 American with Disabilities Act (ADA) supports these rights. Cities and towns must now provide accessible sidewalks for all pedestrians. Recent rules and guidelines have clarified the technical requirements for sidewalks.

The rules in the *ADA Accessibility Guidelines* (ADAAG) are enforceable by law. This article describes key rules applicable to sidewalks. Sidewalk designers should still consult ADAAG and other sources. (See “References” at the end of this article.)

Throughout the article, the verb “shall” indicates a mandatory rule. “Should” indicates a recommendation, usually from FHWA or an ADA committee.

The Rules

By ADAAG definition, exterior accessible routes (ARs) are continuous, unobstructed paths that connect buildings or facilities. They include parking access aisles, curb ramps, crosswalks, sidewalks, and ramps.

ADAAG applies to new construction and alterations. Alterations include roadway or sidewalk rehabilitation, reconstruction, and resurfacing beyond normal maintenance. ADAAG considers repainting markings, patching potholes, and similar spot repairs to be normal maintenance.

ADAAG also applies to ARs that serve many temporary facilities. This includes highway work zones. (See the MUTCD.)

For new or altered buildings, the owner shall provide at least one AR between it and other accessible buildings and facilities. One or more AR shall also connect it to public transportation stops, parking spaces, passenger loading zones, and public streets and sidewalks.

The box contains mandatory rules for all ARs. They therefore apply to sidewalks and curb ramps.

ADAAG Rules for Accessible Routes

Width. The minimum clear width shall be 36 inches (except at doors). If a person in a wheelchair must make a turn around an obstruction, the minimum clear width shall be as shown in ADAAG Figures 7(a) and 7(b).

Passing Space. If an AR has less than 60-inch clear width, passing spaces at least 60 by 60 inches shall be located at intervals not to exceed 200 feet. A T-intersection of two sidewalks is an acceptable passing place.

Head Room. ARs shall have 80-inch minimum clear headroom. (The MUTCD requires that, where pedestrian movement occurs, the bottom of a traffic sign shall be at least 7 feet.)

Surface Textures. AR surfaces shall be stable, firm, and slip-resistant.

Slope. Nowhere shall the cross slope exceed 1:50. ARs with running slopes greater than 1:20 are ramps. The least possible slope shall be used for any ramp:

- In new construction, the maximum slope shall be 1:12. The maximum rise for any run shall be 30 inches.
- On existing sites, if space limitations prohibit using a 1:12 slope or less, a slope between 1:10 and 1:12 is allowed for a maximum rise of 6 inches. A slope between 1:8 and 1:10 is allowed for a maximum rise of 3 inches. A slope steeper than 1:8 is not allowed.

Changes in Level. Changes in level up to 1/4 inch may be vertical and without edge treatment. Changes between 1/4 and 1/2 inch shall be beveled with a slope no greater than 1:2. Changes in level greater than 1/2 inch shall be accomplished by means of a ramp. (See “Slope” above and “Curb Ramps” below.)

Sidewalks

Public sidewalks are accessible routes as ADAAG defines ARs. The rules above, therefore, apply to sidewalks.

The ADAAG rules are minimums. For example, they require a 36-inch sidewalk width and a periodic 60-inch passing width. FHWA recommends a 60-inch clear travel zone, with additional width for store frontage, plantings, furniture, and parking meters. (See "FHWA" in "References.")

The ADAAG rules above apply to driveway crossings. Designers should provide level areas across driveways that meet the rules for ARs.

Curb Ramps

Municipalities shall provide curb ramps wherever sidewalks cross curbs. Their slopes shall be as described above, measured as shown in ADAAG Figure 11. Transitions from ramps to walks, gutters, or streets shall be flush and free of abrupt changes. Maximum slopes of adjacent surfaces shall not exceed 1:20.

The minimum width of a curb ramp shall be 36 inches, exclusive of flared sides. FHWA and AASHTO recommend a 48-inch minimum width. Ramp sides shall be flared where pedestrians must cross it. The maximum slope of the flare shall be 1:10. Curb ramps with returned curbs may be used where pedestrians would not normally cross the ramp.

Ramp alignment should be perpendicular to the curb. Level landings at the ramp top and bottom should be at least 48 inches square and sloped more than 1:50 in all directions. Curb ramps shall be located or protected to prevent their obstruction by parked vehicles. ADAAG has specific rules for marked crossings and built-up and corner ramps in its paragraphs 4.7.6, 4.7.9, and 4.7.10.

Detectable Warnings

ADAAG does not allow grooves as a detectable warning. Municipalities shall provide a 24-inch wide strip of raised truncated domes at the bottom of all

curb ramps. They should install 24-inch detectable warning strips

- At the edge of depressed corners;
- At the border of raised crosswalks and raised intersections;
- At the border of medians and islands; and
- At the edge of transit platforms and where railroad tracks cross the sidewalk.

Figures 1 and 2 show the dimensions, spacing, and alignment of truncated domes. Domes shall contrast visually with adjoining surfaces, either light-on-dark, or dark-on-light.

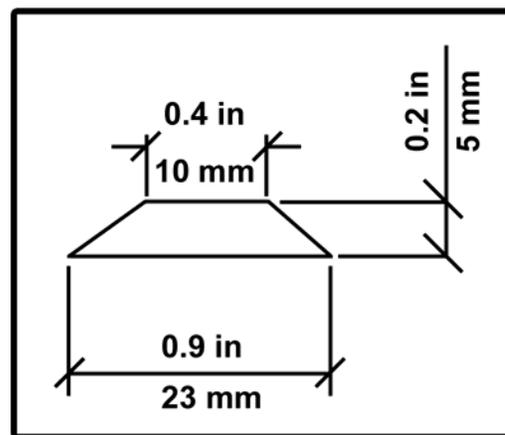


Figure 1. Truncated Dome Dimensions

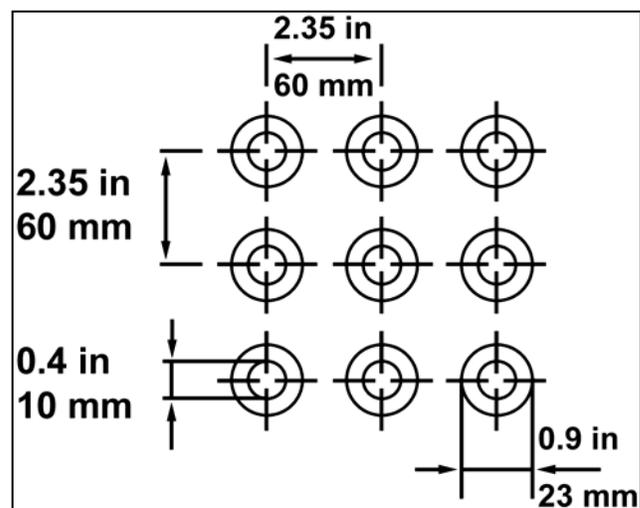


Figure 2. Truncated Dome Spacing

References:

- ADAAG. *ADA Accessibility Guidelines for Buildings and Facilities*. 2002.
<http://www.access-board.gov/adaag/html/adaag.htm#purpose>
ADAAG *Requirements for Detectable Warnings*, March 2003.
<http://www.access-board.gov/adaag/dws/update.htm>
FHWA. *Designing Sidewalks and Trails for Access, Part II of II: Best Practices Design Guide*.
<http://www.fhwa.dot.gov/environment/sidewalk2/>