

# Accessible Curb/ Pedestrian Ramps

**DAB**

Accessible Curb Ramp Guidance

**503**

Development Assistance Bulletin

**Curb ramps** are critical to providing access for people who use wheelchairs, useful for those using walkers, canes and pushing/pulling objects such as strollers. Curb ramps are commonly found in parking lots and sidewalk connection points within business development sites. Ramps should be aligned with an access aisle or crosswalk.

**All ramps have certain elements** that must be met:

- 1) Running Slope (Grade), 2) Cross-Slope, 3) Width, and 4) Counter-Slope

**4 Recommended Ramp Types** are: 1) Perpendicular with Side Flares, 2) Perpendicular with Returned Curbs, 3) Parallel, and 4) Built-Up.

## RAMP ELEMENTS

- 1) **Grade:** Steep grades are difficult for people who use walking aids and manual wheelchairs to negotiate because significantly more energy is needed.

The maximum curb ramp (running) slope is 8.3 percent. However, if 8.3 percent is used as the design standard there will be no allowance for construction tolerances. Therefore, rather than using 8.3 percent for designing curb ramp grade, a grade of 7 percent is recommended to allow a construction tolerance.

Central to the grade of the ramp is the length which is determined by the vertical change in elevation between the roadway and the sidewalk. The greater the vertical change, the longer the ramp will have to be in order to meet the recommended grade.

Curb Height	Length of Ramp Run
8 in.	10.7 ft.
7 in.	9.3 ft.
6 in.	7.9 ft.
5 in.	6.6 ft.

- 2) **Cross-Slope:** Should not exceed 2.0 percent.

- 3) **Width:** The recommended minimum curb ramp width is 48 in. Where space is restricted, the width of the ramp can be reduced to 36 in.

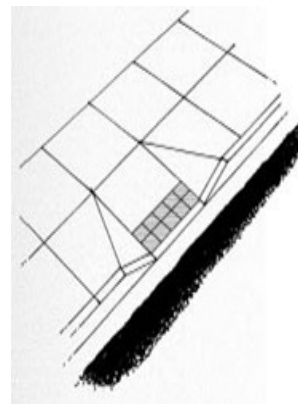
- 4) **Counter-Slope:** The counter (gutter) slope at the bottom of the ramp to the parking lot or roadway should not exceed 5% grade.

## The 4 Most Common Ramp Types:

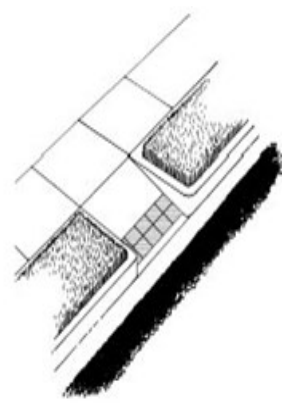
- 1) **Perpendicular Curb Ramp – Side-Flares, or**

- 2) **Perpendicular Curb Ramp - Return Curb**

A **perpendicular ramp** (either side flares or return curb) is one that is aligned so that the ramp is perpendicular to the curb. These ramps must have a top level landing at least 36" long and wide.



Side Flares



Return Curb

See 405 & 406 ADA Standards or ANSI A117.1

**Side Flares (Wings)** provide a gradual transition between the sidewalk and the ramp and should be used for attached sidewalk. Returned curbs transition much more abruptly and should only be used in areas that pedestrians would not normally travel such as planting strips/detached sidewalk.

If a flare is provided, the following recommendations should be applied:

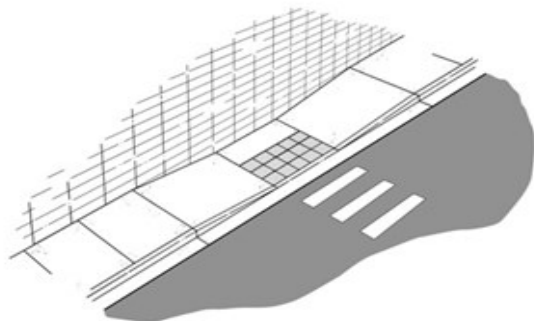
- A) If the level landing is > 48 in long, the flares should have a maximum slope of 10 percent;
- B) If the level landing is between 36 in and 48 in long, the maximum slope of the flares should be 8.3%; and
- C) Level landings must not be < 36 in long.

A **Returned Curb** is the preferred ramp where we have a transition area between the curb ramp and the sidewalk/amenity zone. A returned curb is the preferred transition because:

- A) The sides of the curb ramp are easier to detect by people with vision impairments who use a white cane for navigation and more clearly delineated for wheelchair users (less likely to tip)
- B) It enables signage to be positioned closer to the curb ramp and channels water/debris more effectively; and
- C) A returned curb is less expensive and easier to construct.

*\*If it is not possible to provide a top level landing the perpendicular curb ramps should not be installed because unsafe cross slopes can occur.*

### 3) Parallel Curb Ramps



A parallel curb ramp has two ramps leading down towards a center level landing at the bottom between both ramps with a level landing at the top of each ramp.

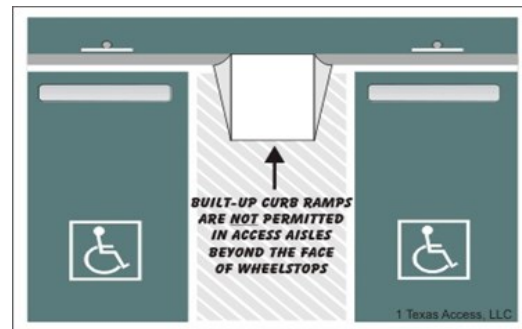
Parallel ramps are great choices for narrow sidewalks. Parallel curb ramps are also effective on steep terrain and locations with high curbs because the ramps can easily be lengthened to reduce grades. The landing at the bottom of a parallel curb ramp is essentially at grade level and must be sloped (under 2%) towards the road/parking area to limit water drainage issues. Parallel curb ramps are usually designed across the full width of the sidewalk and may require a curb edge on one side to help retain landscaping.

### 4) Built-Up Curb Ramps

A built-up curb ramp typically consist of asphalt or concrete that is poured and shaped into a ramp that runs at a 90-degree angle away from an intact curb down to the roadway/parking lot.

Built-up curb ramps cannot project into the path of cars. The "path of cars" includes anywhere cars are allowed to drive, including roadways, parking spaces, and access aisles.

Built-up curb ramps should have flared sides with a slope of 10 percent or less or have edge protection and handrails on the sides.



**\* PLEASE NOTE:** Detectable warnings not required on any curb ramp unless at pedestrian street crossing in public right of way.