

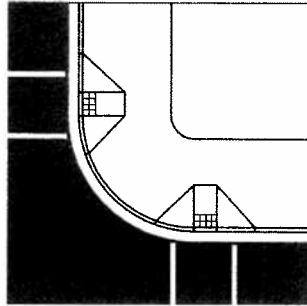
# 7

# CURB RAMPS

## CHAPTER

**Table 7 - 2. Curb Ramps: Perpendicular**

**Good Design:**  
Perpendicular curb ramps with flares and a level landing



**Design Specifications:**

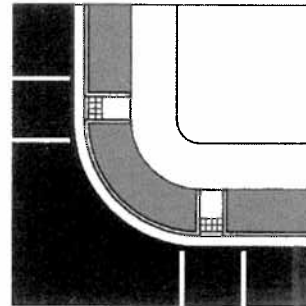
- Ramp slope =  $7.1 \pm 1.2$  percent
- Gutter slope = 5% maximum
- Changes in level = flush
- Ramp width = 1.22 m (48 in) recommended minimum
- Landing width = 1.22 m (48 in) recommended minimum
- Flare slope = 10 percent maximum
- Cross slope = 2 percent maximum
- Truncated Domes = 610 mm (24 in)

**Recommendations:**

Perpendicular curb ramps require wide sidewalks that permit a level landing; consider using in the following situations:

1. In new construction;
2. In urban areas;
3. At signalized intersections; or
4. On arterials and other roads with moderate to heavy traffic volumes

**Good Design:**  
Perpendicular curb ramps with returned curbs and a level landing

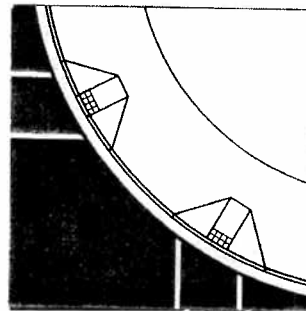


**Recommendations:**

Returned curbs should only be installed on sidewalks with wide planting strips. Otherwise, this design is similar to two perpendicular curb ramps on a wide sidewalk.

**Acceptable Design:**

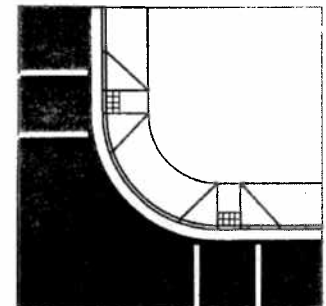
Perpendicular curb ramps designed perpendicular to the curb on a corner with a wide turning radius



**Recommendations:**

This design should be used at corners with wide turning radii and wide sidewalks. Wide turning radii are sometimes necessary but are never ideal for pedestrians.

**Inaccessible:**  
Perpendicular curb ramps without a landing

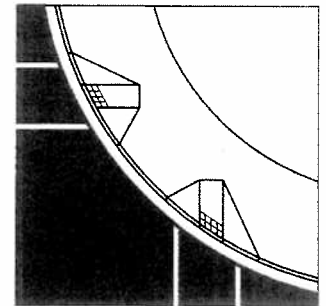


**Recommendations:**

Perpendicular curb ramps without level landings should not be installed and existing curb ramps should be replaced.

**Inaccessible:**

On a corner with a wide turning radius, curb ramps are aligned parallel with the crosswalk.



**Recommendations:**

On corners with wide turning radii, curb ramps that are not perpendicular to the curb create problems for wheelchair users because they require users to negotiate rapid changes in grade and cross slope with two wheels leaving the ground. A wider ramp will allow a wheelchair user to turn onto the landing while traveling over less of the flare.

# 7

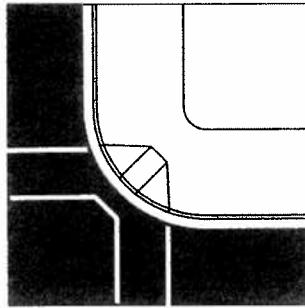
# CURB RAMPS

## CHAPTER

**Table 7 - 2. Curb Ramps: Diagonal**

**Acceptable Design:**

Diagonal curb ramp with flares and a level landing, in addition to at least 1.22 m (48 in) of clear space.



**Design Specifications:**

Ramp slope = 8.33 percent

Gutter slope = 2.0 percent maximum

Changes in level = none

Ramp width = 1.22 m (48 in) recommended minimum

Landing width = 1.22 m (48 in) recommended minimum

Flare slope = 10 percent maximum

Cross slope = 2 percent maximum

Truncated domes = 610 mm (24 in)

Clear space = 1.22 m (48 in) minimum

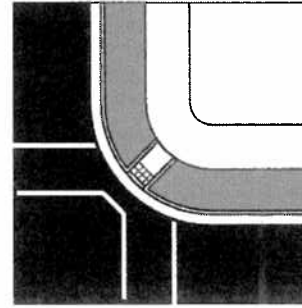
**Recommendations:**

Diagonal curb ramps are never ideal and should be avoided in new construction. They should only be considered during retrofitting where the following circumstances apply:

1. Where utilities prevent the installation of two perpendicular ramps;
2. At intersections that are not signalized; or
3. In some residential areas, where traffic volumes are very low.

**Acceptable Design:**

Diagonal curb ramp with returned curbs, a level landing, and sufficient clear space in the crosswalk.

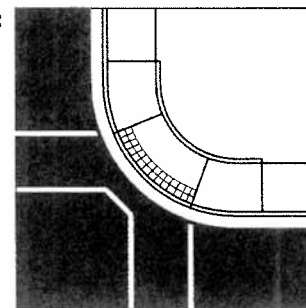


**Recommendations:**

Returned curbs should only be installed on sidewalks with wide planting strips. Otherwise, this design is similar to a diagonal curb ramp with a level landing.

**Acceptable Design:**

Single parallel curb ramp with at least 1.22 m (48 in) clear space.

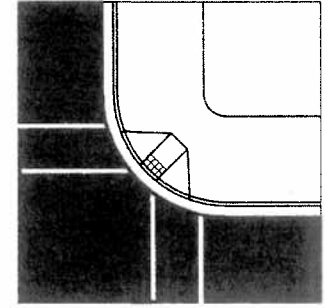


**Recommendations:**

If a diagonal curb ramp is warranted and the sidewalk width is limited, a single parallel curb ramp should be considered.

**Inaccessible:**

Diagonal curb ramp with no clear space or no level area at the bottom of the curb ramp.

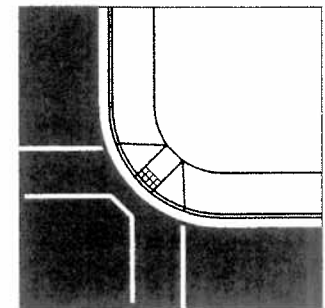


**Recommendations:**

If a level landing or a clear space of 1.22 m (48 in) cannot be provided at the bottom of the curb ramp, a diagonal curb ramp should not be installed.

**Inaccessible:**

Diagonal curb ramps without a level landing.



**Recommendations:**

Diagonal curb ramps without level landings should be replaced because they force users to travel over flares.

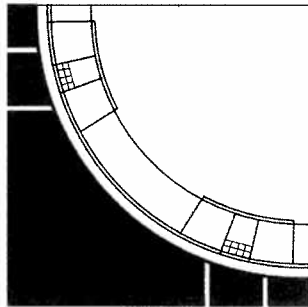
# 7

# CURB RAMPS

## CHAPTER

**Table 7 - 2. Curb Ramps: Parallel and Combination**

**Good Design:**  
Two parallel curb ramps on a wide turning radius.



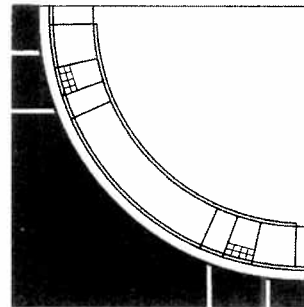
**Design Specifications:**

- Ramp slope = 7.1 percent
- Gutter slope = 5 percent maximum
- Changes in level = none
- Ramp width = 1.22 m (48 in) recommended minimum
- Landing width = 1.22 m (48 in) recommended minimum
- Landing slope = 2 percent maximum towards the gutter
- Cross slope = 2 percent maximum
- Truncated domes = 610 mm (24 in)

**Recommendations:**

Parallel curb ramps are a good design on narrow sidewalks and on sidewalks where a longer ramp length is needed, such as on sidewalks with high curbs. Two parallel curb ramps are less desirable than two perpendicular curb ramps because people traveling around the corner have to travel over four ramps. The landing should be sloped 2.0 percent towards the gutter.

**Good Design:**  
Two parallel curb ramps with a lowered curb.

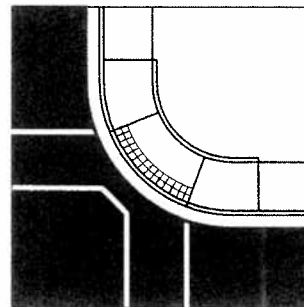


**Recommendations:**

If the curb between the two parallel curb ramps is lowered, the length or slope of the inside ramps can be reduced because of the reduced elevation change between the sidewalk and the street.

**Acceptable Design:**

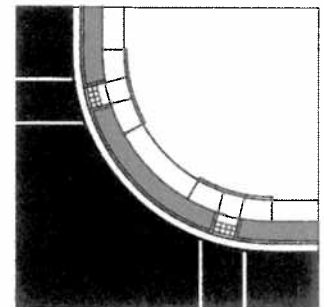
Single parallel curb ramp with at least 1.22 m (48 in) clear space.



**Recommendations:**

If the sidewalk is narrow and has a tight turning radius, there may not be room for two parallel curb ramps. In this situation, a single parallel curb ramp should be considered.

**Good Design:**  
Two combination curb ramps on a corner with a wide turning radius.



**Design Specifications:**

- Ramp slope = 7.1 percent
- Gutter slope = 5 percent maximum
- Changes in level = none
- Ramp width = 1.22 m (48 in) recommended minimum
- Landing width = 1.22 m (48 in) recommended minimum
- Landing slope = 2 percent maximum towards the gutter
- Cross slope = 2 percent maximum
- Detectable warning = 610 mm (24 in)

**Recommendations:**

A combined curb ramp uses the concept of the parallel ramp to lower the elevation level of the landing and then uses a perpendicular ramp to bridge the remaining elevation gap. This ramp works well on narrow sidewalks because each ramp is relatively short. Combination curb ramps are sometimes designed as a single ramp at the corner if the turning radius of the corner is small.