

6. Ramps, Curb-Ramps and Slopes

Sections 11B-405, 11B-406, and 11B-505

When slopes are encountered on the route to a polling place, they fit into three categories:

1. When a slope measures 5 percent or less, it is not a ramp; it is merely a slope in the circulation path.
2. When a slope measures more than 5 percent, it is considered a ramp.
3. When a slope provides access across a curb, it is defined as a curb-ramp or curb-cut.

The maximum slope allowed for any ramp that provides access for elderly voters and voters with disabilities is 8.33 percent. (CCR, Section 11B-405.2.) The percent of slope is determined by dividing the number of inches of vertical rise (height) for each 12 inches of horizontal run (length). For example, a slope with 1 inch of vertical rise for every 12 inches of horizontal run equals the maximum slope of 8.33 percent ($1/12 = 8.33$ percent). (Similar to Section 2, Accessible Route, when ramps slope to the side, the maximum cross-slope allowable is 2.08 percent.) (CCR, Section 11B-405.3.)

Ramps

Ramps shall be a minimum of 48 inches wide with level landings at both the top and bottom of every ramp. (CCR, Sections 11B-405.5, 11B-405.7 and 11B-405.7.1.)

Top landings shall be at least 60 inches wide and 60 inches long. Bottom landings shall be at least 72 inches long. (CCR, Sections 11B-405.7.2.1, 11B-405.7.3 and 11B-405.7.3.1.)

Another type of landing is called an "intermediate landing." When the sloped area of a ramp rises vertically to a height of 30 inches above the bottom landing, the ramp shall end or there shall be a break in the slope for a level intermediate landing. (CCR, Section 11B-405.6.) If a ramp changes direction at an intermediate landing, the intermediate landing shall be at least 60 inches wide by 72 inches long in the direction of downward travel from the upper ramp run. (CCR, Section 11B-405.7.4.) See Figure 20.

At bottom and intermediate landings, the landing width shall be at least as wide as the ramp. (CCR, Section 11B-405.7.2.)

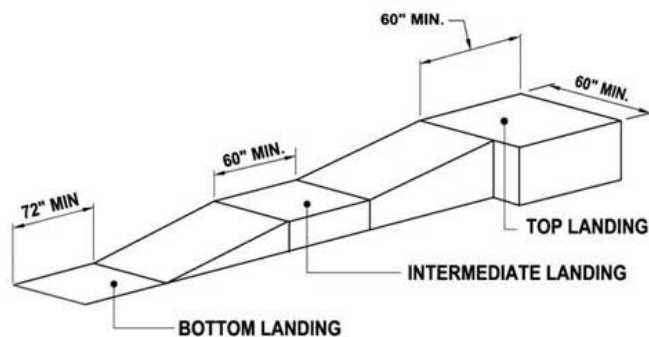


Figure 20: Ramps showing landings and a change of direction at intermediate landing.

If a ramp is not adjacent to a wall, a curb or barrier shall be provided that prevents the passage of a 4-inch diameter sphere, where any portion of the sphere is within 4 inches of the finish floor or ground surface. To prevent wheel entrapment, the curb or barrier shall provide a continuous and uninterrupted barrier along the length of the ramp.

Edge protection on one side of the ramp is permitted when the other side adjoins a wall or other vertical surface. (CCR, Section 11B-405.9.) See Figure 21.



Figure 21: Accessible ramp with edge protection.

Handrails that provide continuous support are required on both sides of a ramp and shall continue at least 12 inches past the end of the ramp surface. (CCR, Sections 11B-505.2, 11B-505.3 and 11B-505.10.1) The handrail extensions shall be rounded or return to the ground, a wall, or post as shown in Figure 21. By extending the handrail 12 inches past the slope of the ramp, voters with balance difficulties will be on a level surface when they release their grip on the handrail. (CCR, Section 11B-505.5.10.1.)

Circular handrails shall have a diameter of 1 ¼ inches to 2 inches. Non-circular handrails shall have a perimeter of 4 inches minimum and 6 ¼ inches maximum and a cross section dimension of 2 ¼ inches maximum. (CCR, Sections 11B-505.7.1 and 11B-505.7.2.) When handrails are mounted on a wall, the gap between the handrail and the wall shall be at least 1 ½ inches. (CCR, Section 11B-505.5.) Handrails shall be placed on both sides of the ramp. They shall be continuous the full length of the ramp and shall be mounted 34 to 38 inches above the ramp surface measured to the top of the handrails. (CCR, Sections 11B-505.2 and 11B-505.4.)

When a ramp has a change in direction, the inside rail shall be continuous from landing to landing as shown in Figure 22. (CCR, Sections 11B-505.2 and 11B-505.3.) At exterior doors, when the top landing and door landing overlap, a ramp does not require handrails if it is less than 6 inches high or 72 inches in length. (CCR, Sections 11B-505.2 Exception 3 and 11B-505.3.)



Figure 22: Ramp with continuous handrails.

Curb-Ramps

When a pedestrian route crosses a curb, (a curb is considered a change in level as explained in Section 2, Accessible Route) a slope is required at the curb face or preferably cut into the curb as shown in Figure 23. (CCR, Section 11B-303.4.)

Unlike ramps, curb-ramps do not require handrails. Instead, the curb-ramp will have side flares to prevent a voter with limited vision or a mobility disability from traveling off to the side of the curb-ramp slope. See Figure 23.

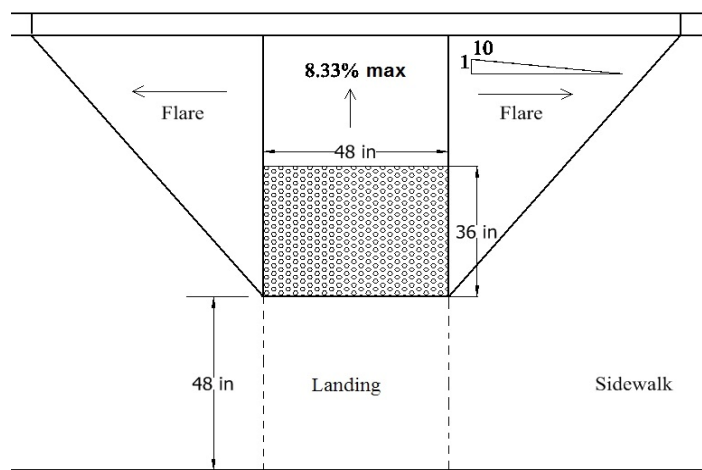


Figure 23: Curb ramp.

Similar to ramps, the maximum slope of a curb-ramp shall be 8.33 percent and the width shall be at least 48 inches. (CCR, Section 11B-406.5.2.) However, the landing dimensions for curb-ramps are different from ramps. The top landing of a curb-ramp shall be a minimum of 48 inches long to provide a resting place for someone who has just traveled up the curb ramp slope. To rest at the top of the slope also means the top landing shall be level. The bottom landing shall also be at least 48 inches long. (CCR, Section 11B-406.5.9. The maximum slope allowed for the first 24 inches of the bottom landing shall be 5 percent or less. (CCR, Section 11B-406.5.8.)

It is important to remember that ramps and curb-ramps are a part of an accessible route that includes the cross-slope, overhead clear space, protruding objects, changes in level, and stable, firm, and slip-resistant surfaces as explained in Section 2, Accessible Route.