

Wheelchair Ramp Design Plans

Measuring the Height of the Steps

1. Using a ruler or yardstick, starting at the bottom, measure the vertical distance from the floor to the top of the first step. Then measure the vertical distance from the top of the step to the top of the next step. Add all the dimensions together to get the total height.
2. The maximum height that a wheelchair ramp can be used is about 30", between the floor and the top of the steps (or about four steps). ADA Guidelines (these are recommendations not laws or regulations) recommend 1 foot of horizontal length per 1 inch of height, which translates to a five-degree slope. The maximum practical slope would be .5 foot of length per 1 inch of height or 10-degree slope. Greater than 10 degrees is not recommended due to the steepness and the difficulty of pushing a wheelchair up this incline. Powered wheelchairs and scooter can navigate a 10-degree slope. However, slopes steeper than 10 degrees have the potential for the chair to tip over backwards without a caregiver pushing from behind.
3. For example, a 24 inch height (typically three steps) would require a ramp length somewhere between 24 feet (1 foot per 1 inch height) and 12 feet (.5 feet per 1 inch height) long. This is the length of the ramp you will need to keep the slope between 5 degrees and 10 degrees. In this case, using a 12-foot long ramp will be a 10 degree slope. Lumber comes in standard lengths of 8 feet, 10 feet, 12 feet and 16 feet.
4. In addition to the length of the ramp, a minimum of 4 feet (ideally 5 feet) of additional distance in front of the ramp is required to provide room for the caregiver and the wheelchair or scooter to make turns to get onto the ramp.

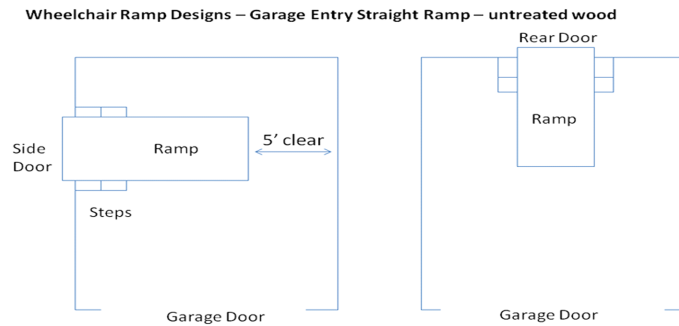
So, you can see a ramp requires a lot of space, which makes a garage entry using a straight ramp the most desirable choice if possible. Our next element to analyze is selecting the optimum location to put the ramp.

Selecting the Best Entryway into the Home

The vast majority of homes only have two practical entryways; the front door and the garage. The width of the door from edge to edge should be 32 inch wide for wheelchair entry. (A 30-inch wide door may be suitable but you must carefully measure the actual open clear width of the doorway and compare to the outside width of the wheelchair to be sure.) Most front doors are 36 inches wide. The garage entry is the best choice where possible.

Garage Entryway

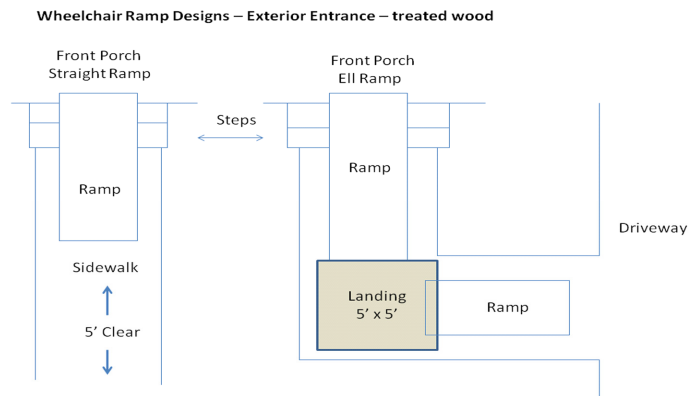
1. Typically has the most space directly in front of the entryway to create the gentlest slope possible.
2. Generally allows a straight ramp design into the home, which is easiest to build and lowest cost.
3. It is protected from the elements allowing use even in inclement weather.
4. Allows you to purchase untreated wood, which is much lighter in weight.



Front Door Entryway

If the garage entry is not feasible due to excessive height, position of the doorway to the garage or the doorway is too narrow, the front door entry is the next obvious choice. Typically most front entry designs do not have a long straight sidewalk in front of the steps or have excessive height requirements. This requires the addition of a 'landing' to be incorporated into the design to allow a 90 degree turn to use the sidewalk going to the driveway. Or, when the height to be overcome is more than 30 inches, a landing can be used in a straight design or a 90-degree design to allow two ramps to be used to reach the top of the steps. A landing can be used in a garage design as well. A landing must be 5 feet x 5 feet when used in a 90 degree design to provide the room for a caregiver to position the wheelchair onto the next leg of the ramp. A landing used in a straight design can be 5 feet long by 34.5 feet wide.

Remember the top step of a front door entryway is actually the front stoop. Another ramp called a doorway transition ramp is required to get thru the front door. This ramp is simple to make and does not require a Wheelchair Ramp Kit. We will describe how this is made in the Construction Plans tab. This doorway transition ramp is also often used to get from the house onto the patio, deck or sunroom where there is a 3 to 5 inch high step to overcome.



Based on the length requirements of the ramp and the physical layout of your home, it will be obvious which entryway is your best choice, which dictates your design (straight or 90-degree turn and treated or untreated wood). If the height in using a single ramp exceeds 30 inches or you require an angle turn other than 90 degrees, you should not use this design. You will either need a professional to build a suitable ramp or if you have a powered wheelchair or scooter that can travel over the yard, consider a side door or rear entry doorway and build a ramp there.

You now know what your design and dimensions of your ramp will be. Next is to go to the Wheelchair Construction Plans section to determine your material requirements and tools you will need.