

Building Ramps and Handrails

To keep you safe at home

UW Medicine
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This handout gives instructions for building ramps and stair handrails for your home.

Ramps

Length and Slope

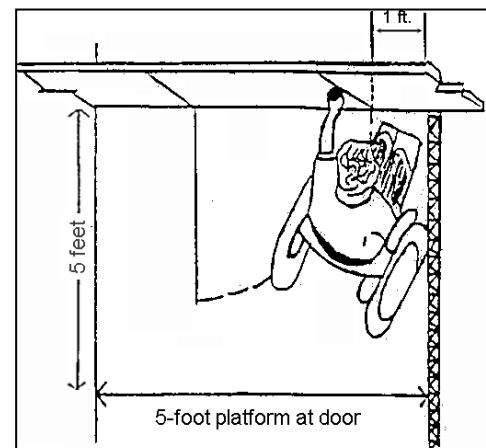
- Ramps should be at least 36 inches wide. If 2 people will be using the ramp at the same time, it should be at least 54 inches wide.
- Your ramp should be 12 inches long for each inch of *rise* (slope). This is the maximum slope that is safe for someone in a wheelchair.
- The length of the ramp depends on the height of the steps. For example, if a set of steps is 3 feet (36 inches) high, you will need a 36-foot ramp (1 foot for every inch of rise).
- The maximum rise should be 30 inches for each portion of the ramp.

Landings and Platforms

- There should be a square level area at the beginning of the ramp, 5 feet wide by 5 feet long.
- If the rise is more than 30 inches, a level platform or landing is needed partway up. Landings and platforms should be 60 inches (5 feet) long, and at least as wide as the ramp.
- Switchback ramps need to be used if there is not enough room for a straight ramp. These ramps should have a platform at least every 30 feet. The platforms should be 5 feet wide and 7 feet, 9 inches long, or double the width of the ramp.
- A platform is needed at the door if the person using the wheelchair will open and close the door by themselves. If the door opens out, the platform will need to extend 1 foot beyond the doorknob side of the door.

Railings and Edges

- A low guardrail should run along the entire length of the ramp.
- The ramp should have at least 1 handrail, but 2 are best. The handrails should be 30 to 32 inches high and go 12 to 18 inches beyond the beginning and end of the ramp.
- The ramp should have an edge that extends 4 inches above the ramp surface.



Opening a door from a wheelchair



*Scan for a digital copy
of this handout.*

Ramp Surface

The ramp should have a hard, textured surface that prevents slipping. You can use:

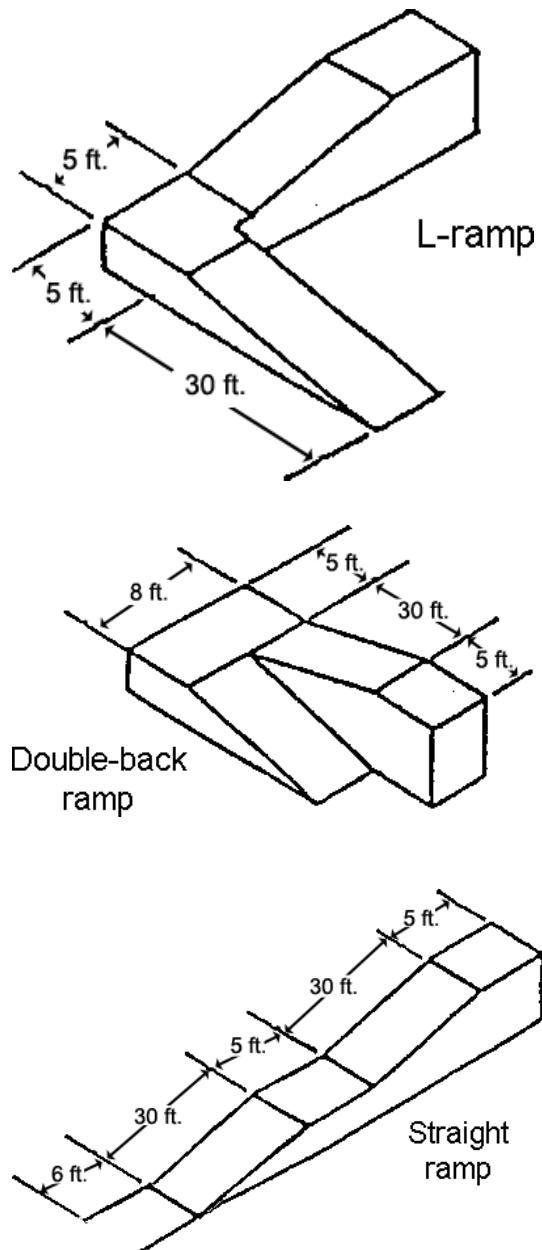
- Commercial non-slip floor covering, such as rolled rubber matting
- Adhesive material
- A mixture of paint and silica sand
- 2-inch strips of non-slip material placed 2 inches apart

Other Ideas and Concerns

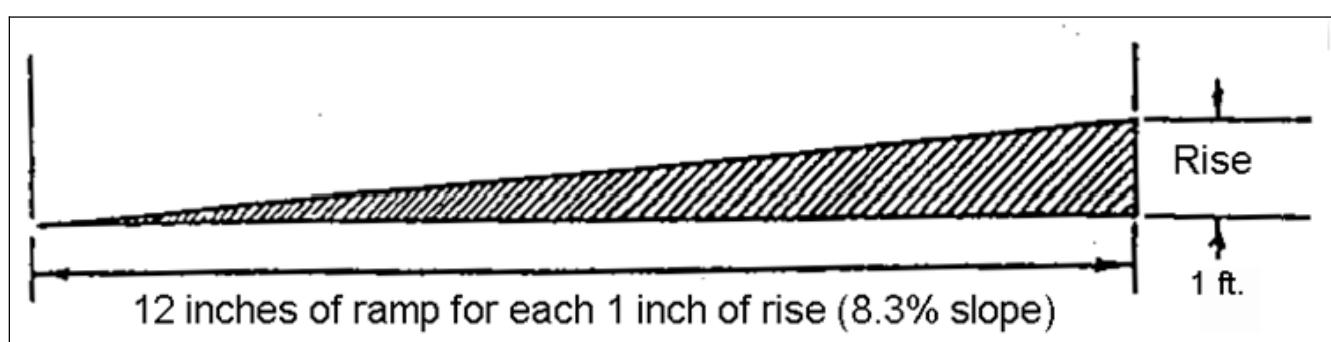
- Be creative when designing and choosing materials for your ramp. You may want the ramp to go along with the style of your house. You may also want to plant flowers and bushes along the sides of the ramp to help it blend with the rest of the yard.
- You can also buy portable, ready-made metal ramps. These are often available at medical supply stores. Ask your occupational therapist for more information.
- All thresholds should be less than $\frac{1}{2}$ inch high. If they are higher, you will need to build a ramp.
- "Hill climbers" can be added to the wheels of your wheelchair to keep your chair from rolling backward. These may be needed on a steeper ramp, or you may need another person's help for safety.

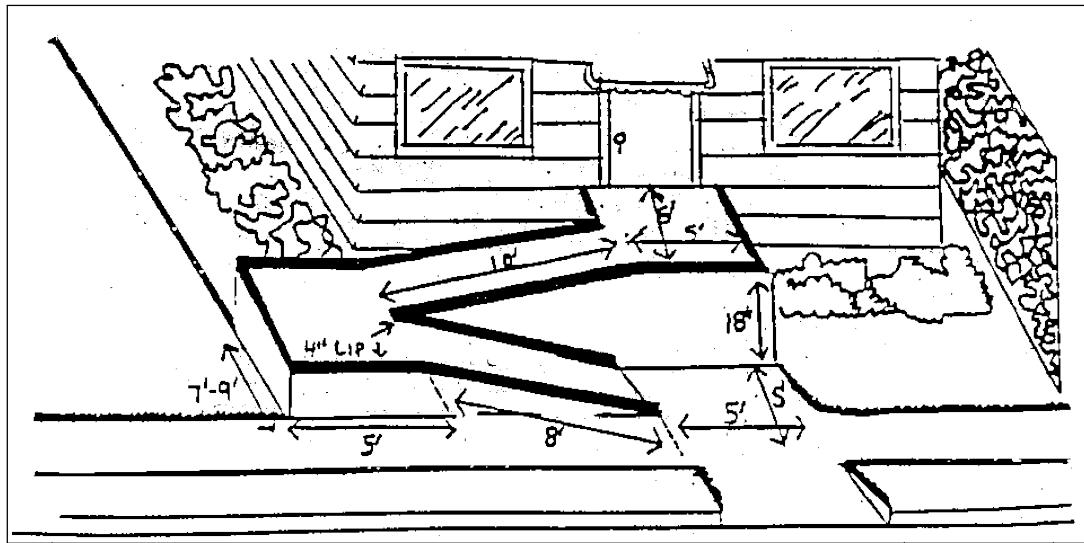
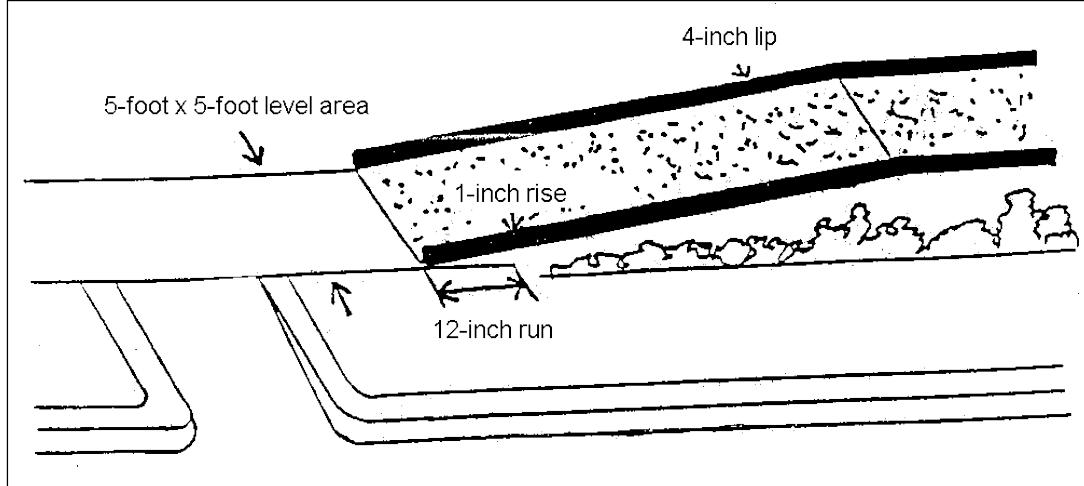
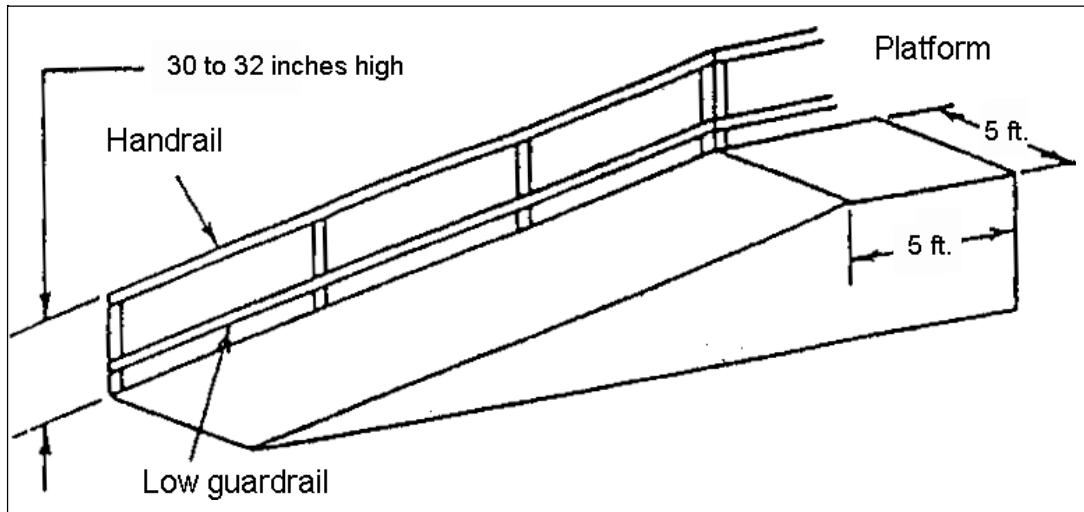
Stair Handrails

- Place rails on both sides of steps and stairs if possible.
- The rail should be 30 to 32 inches high and go 12 to 18 inches beyond the top and bottom of the stairs.



Types of ramps and measurements





Ramp examples and measurements

Portions of this handout were adapted with permission from "Wheelchair Accessibility: Opening the Door to Housing, An Illustrated Manual," by Marilyn Whittmeyer, MOT, OTR, and Jim E. Barrett, MEd, University of Washington, Seattle, Washington 98105, 1977.

Questions?

Your questions are important. Call your doctor or healthcare provider if you have questions or concerns.