



# STAIRS, LANDINGS, AND GUARDRAILS

City of Grand Rapids  
Building Safety Division  
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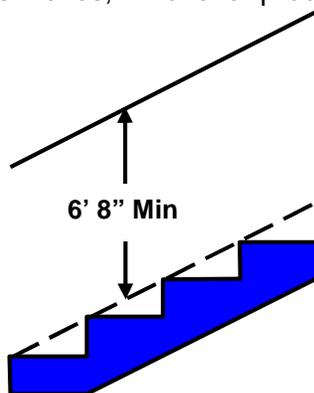
This handout is intended only as a guide and is based in part on the 2015 Minnesota State Building Code, Grand Rapids City ordinances, and good building practice. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the applicable codes or contact your local Building Safety Division.

## STAIRS

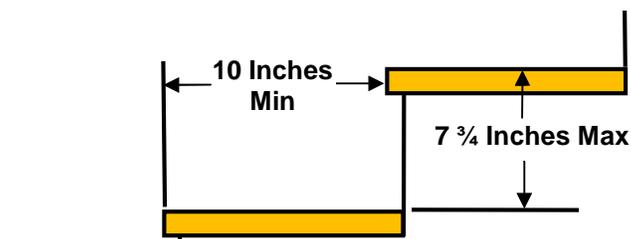
The following spatial requirements apply to stairs:

- Minimum width above the handrail - 36 inches.
- The minimum clear width from the handrail height to the treads is 31 ½ inches for stairs with rails on one side and 27 inches for stairs with rails on both sides.
- Open risers are not permitted when the total rise of the stair exceeds 30 inches unless the open space is such that a 4-inch diameter sphere will not pass through.
- For winder stairs, the width of the tread must be at least 10 inches at a point 12 inches from the side where the treads are narrowest. The minimum width of any tread may not be less than 6 inches.
- When the underside of stairs is enclosed with walls and a door, the walls, ceilings, and under side of the stair must be covered with ½ inch gypsum board.

Stairs must be designed for a 40 pound per square foot uniformly distributed live load. Treads must be designed for the uniformly distributed live load or a 300-pound concentrated load acting over an area of 4 square inches, whichever produces the greatest stresses.



**How to Measure  
Stair Headroom**



**How to Measure Rise  
and Run**

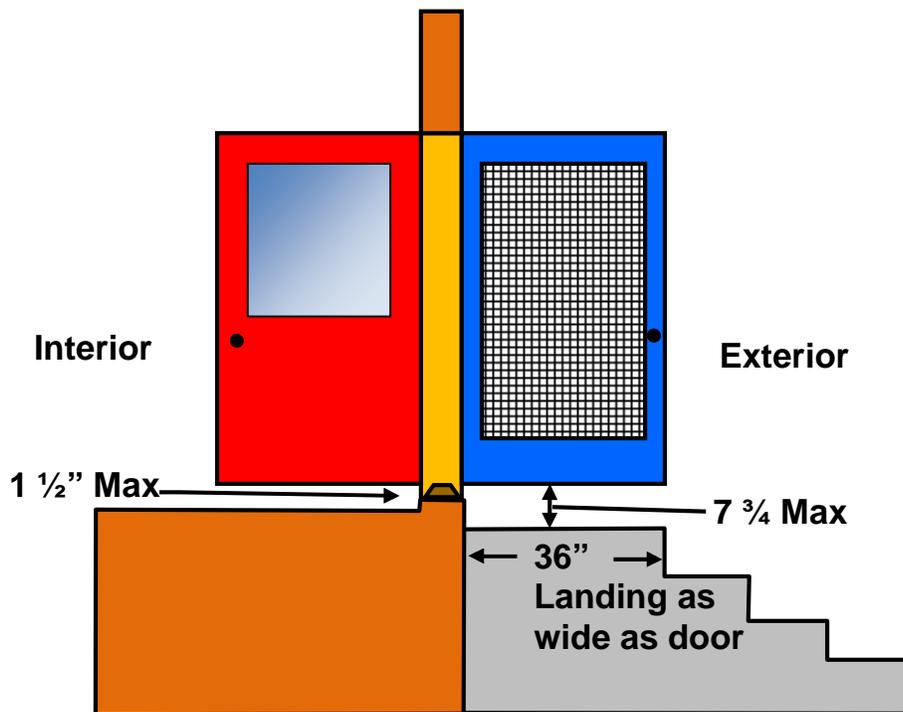
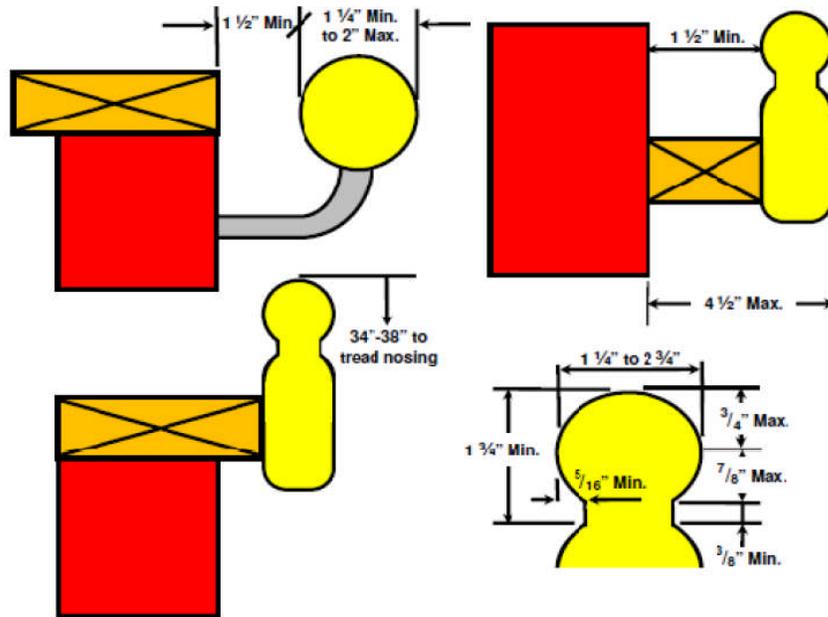
The greatest tread or riser dimension shall not exceed the smallest tread or riser dimension by more than 3/8 inch.

## LANDINGS

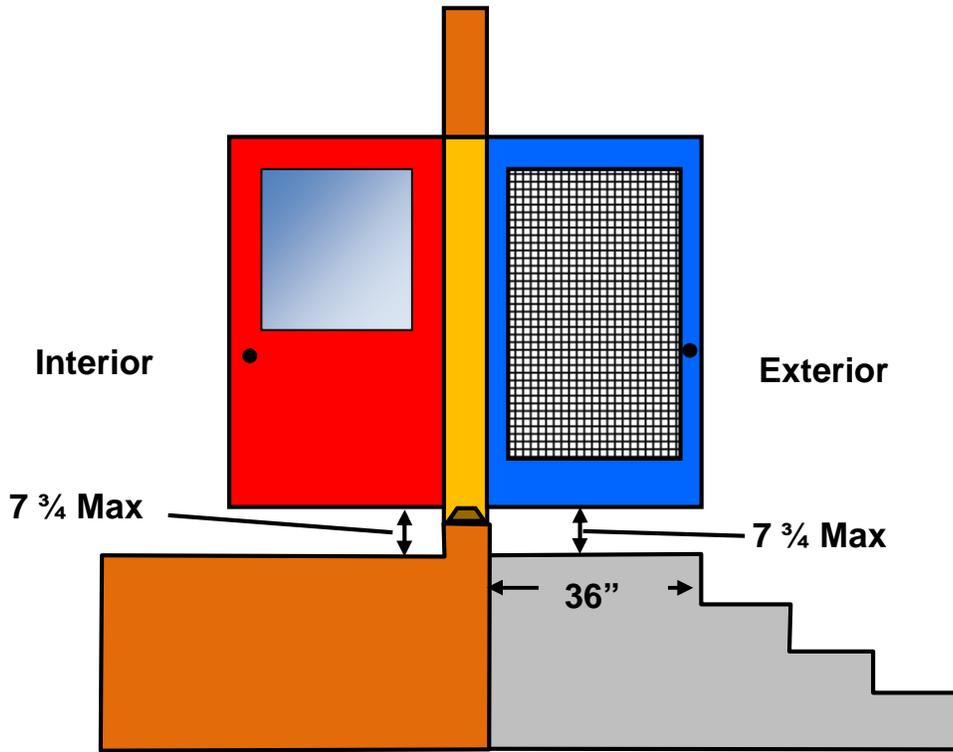
There are no requirements for landings at any **interior** door except adjoining stairs. Stair landings must be as wide as the stair served and 36 inches measured in the direction of travel. A landing is not required at the top of an **interior** stair provided no door swings over the landing.

## HANDRAILS AND GUARDS

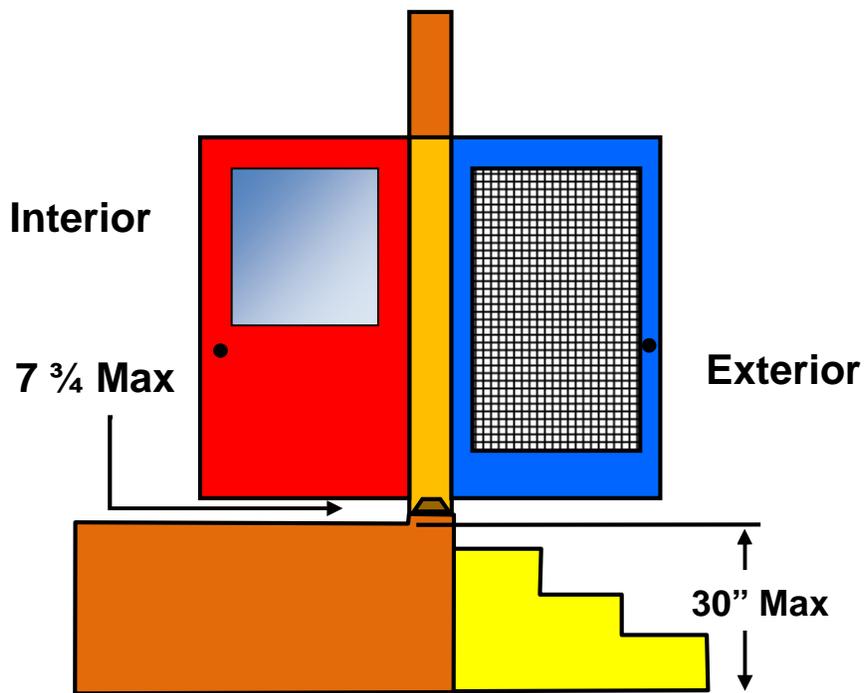
- Handrails are required on at least one side of all stairs with four (4) or more risers.
- Handrails must be mounted **34 - 38"** above the nosing of the stair treads.
- Handrails must extend from a point directly above the bottom riser to a point directly above the top riser.
- Handrails must be continuous for the entire length of a flight of stairs.
- The ends of handrails must be returned to the wall or terminate in a newel post.
- Guards are required on the open side(s) of stairs with a total rise of more than 30 inches above the floor or grade below. Guards on stairs must be not less than 34 inches high measured from the nosing of the treads.
- All required guards must not permit passage of a 4-inch diameter sphere. Guards on stairs must not permit passage of a 4 3/8-inch sphere. The triangular space formed by the bottom of a guard, a stair riser and stair tread may be such that a 6-inch diameter sphere will not pass through.
- Hand rails and guards must be designed to support a 200 lb load applied in any direction at any point along the top of the guard or rail.



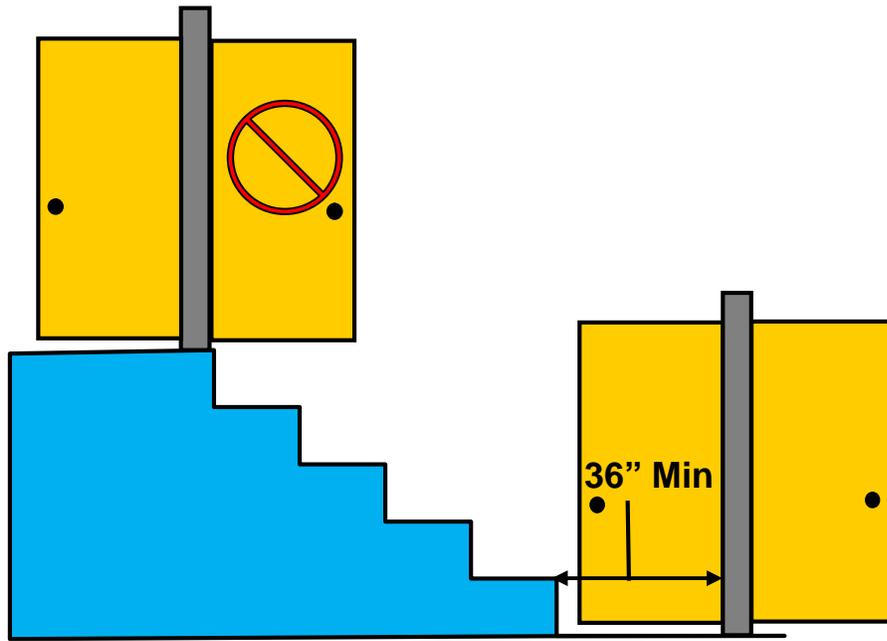
**LANDINGS AT THE MAIN EXIT DOOR**



**LANDINGS AT OTHER THAN THE MAIN EXIT DOOR**



**NO LANDINGS REQUIRED AT OTHER THAN THE MAIN EXIT DOOR FOR EXTERIOR STAIRS LESS THAN 30" HIGH**



**LANDINGS AT INTERIOR STAIRS INCLUDING IN GARAGES**

