

## SAFETY GLAZING

**REFERENCE:** 2021 International Residential Code City of Marion Building Code

### INTRODUCTION:

IRC identifies specific locations as subject to impact and therefore hazardous for the installation of glazing. For example, glass in doors and adjacent to doors has the increased likelihood of accidental breakage due to the movement of opening and closing the door. As well glass adjacent to stairs and wet locations is considered hazardous because of the chances of misstep or fall. The code requires using safety glass, typically tempered or laminated on those locations.

### DOORS

Safety glazing is required in fixed and operable panels of swinging, sliding and bi-fold doors

Exceptions:

- Glazed openings where a 3-in.-diameter sphere cannot pass through.
- Decorative glazing (i.e. stained-glass windows) are not required to be safety glazed; however, etched/frosted glass windows meeting any of the previous criteria must be safety glazed

### ADJACENT TO DOORS

Safety glass is required if it falls within a 24 in. radius of either edges of a door and less than 60 in. above floor.

Exceptions:

- Intervening wall or other permanent barrier between door and glazing
- Access through door is to closet or storage area  $\leq 3$  ft. in depth



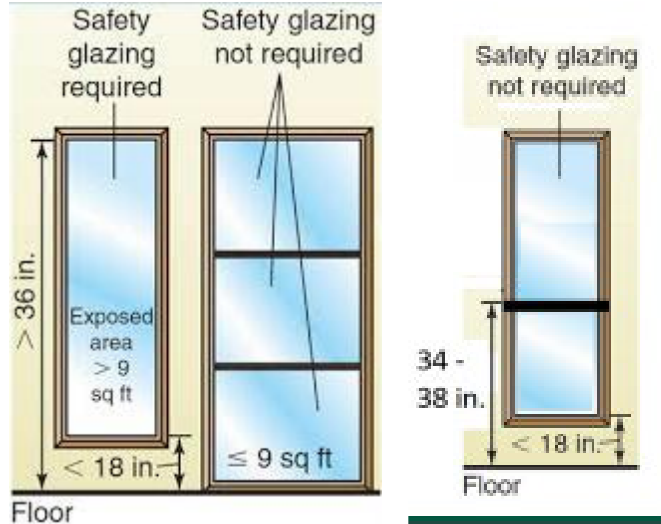
## WINDOWS

Fixed or operable windows must include safety glass if they measure larger than 9 feet square, the bottom edge is less than 18 inches above the floor, the top edge is more than 36 inches above the floor, and there is a walking surface within 36 inches of the glass. Tempered glass is not required unless all four of these conditions are met.

- 1.Exposed area of an individual pane > 9 sq. ft.
- 2.Bottom edge of glazing <18 in. above floor
- 3.Top edge of glazing > 36 in. above floor
- 4.Walking surface within 36 in.

Exceptions:

- Horizontal rail installed 34 to 38in. above the walking surface
- Outboard Panels > 25 feet above any grade, roof, walking surface or other surface adjacent to the glass exterior



## GLAZING IN GUARDS & RAILING

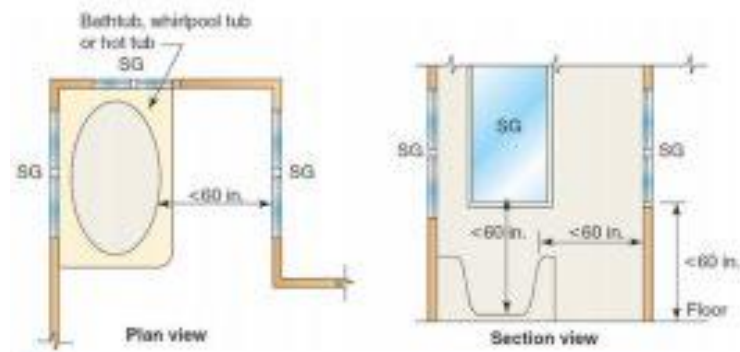
Safety glazing is required in all glazing in guards and railings, including structural baluster panels and nonstructural in-fill panels. If functioning as a guard or railing, it is considered a hazardous location and must be safety glazed. Glazing used in guards require a safety factor of 4. That is 4 x 50 psf (minimum design load for infill components) = 200 psf

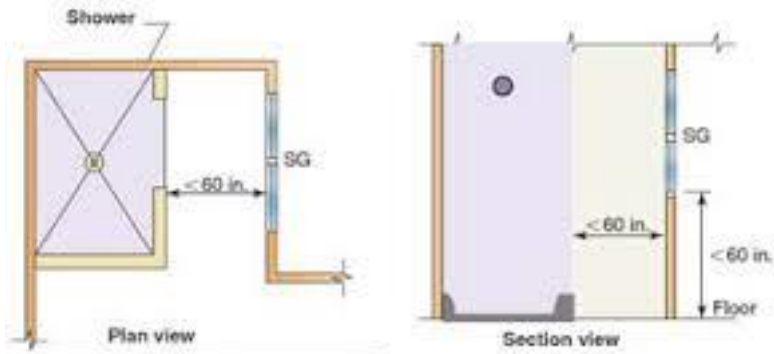


## WET SURFACES

Safety glazing is required in walls, enclosures, or fences containing or facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers, and swimming pools (indoor or outdoor), where the bottom edge is < 60" above any standing or walking surface. This applies to all panes in multiple glazing assemblies, as well as to single panes. Glazing in walls or fences near swimming pools

- < 60 in. of water's edge
- < 60 in. above walking surface.





SG = Safety glazing required  
Measurements are to exposed glazing

Glazing facing shower

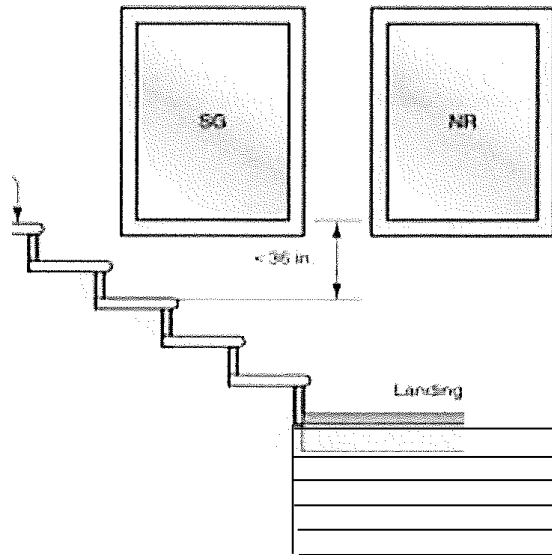
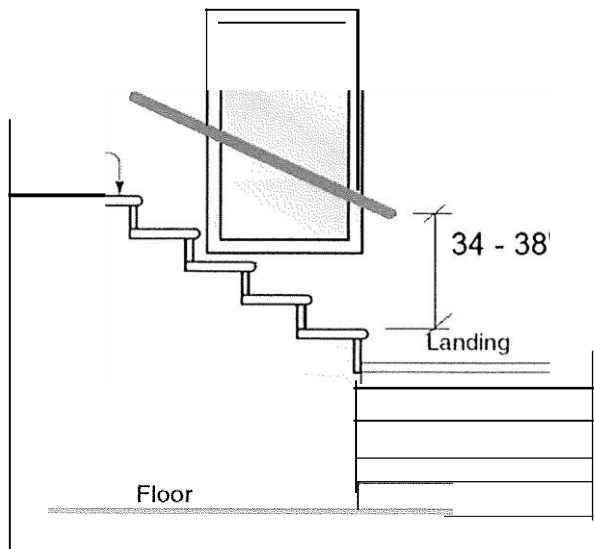
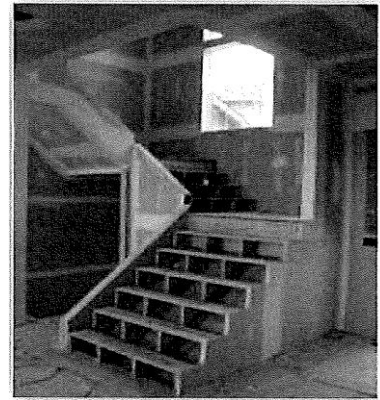
No safety required when 60 in. from edge of: Shower, Sauna, Steam room, Bathtub, Hot tub, Spa, Whirlpool, & Swimming pool

### ADJACENT TO STAIRS/RAMPS

Safety glazing is required where the bottom exposed edge is < 36" above the plane of the adjacent walking surface of stairways, landings between flights of stairs, and ramps.

Exceptions:

- When a rail is installed.
- When glazing is 36", measured horizontally, from the walking surface.



Section view

# ADJACENT TO BOTTOM OF STAIRS LANDING

Applies to the area in front of the plane of the bottom tread. Safety glazing is required adjacent to the landing at the bottom of a stairway where the glazing is < 36" above the landing and within 60" of the bottom tread.

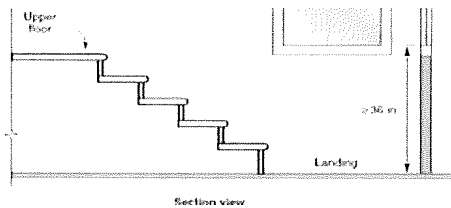
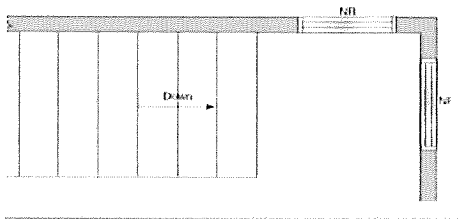
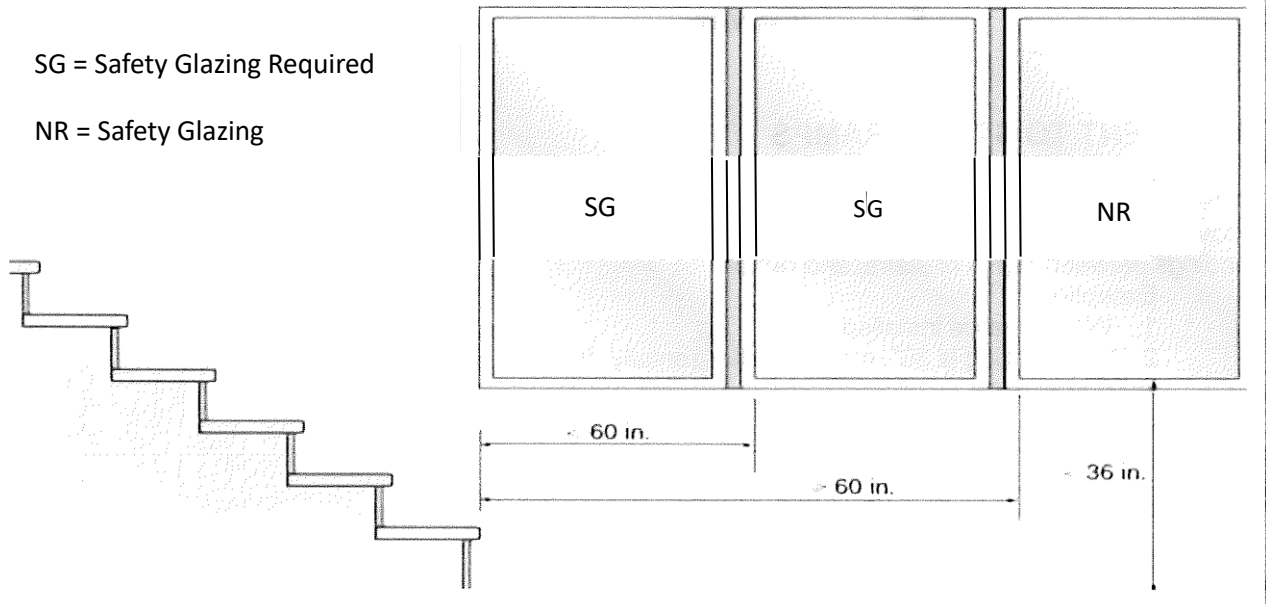
Exceptions:

1. Glazing is protected by a guard and is >18" from guard. Refer to figures for more detail.

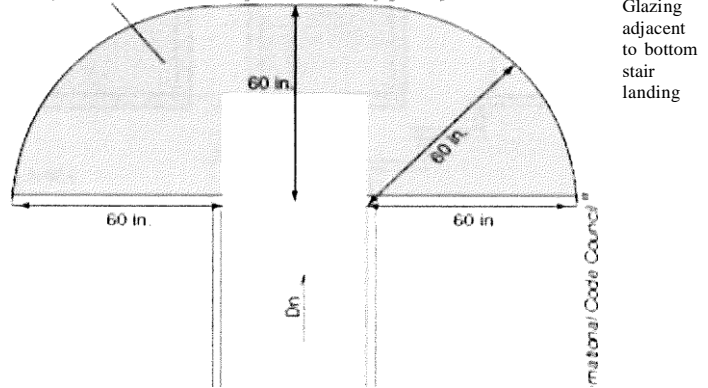


SG = Safety Glazing Required

NR = Safety Glazing



Glazing less than 36 inches above the floor and installed in area adjacent to bottom landing must be safety glazing



Glazing Adjacent to bottom stair landing