

Safety Glazing



Identification of safety glazing

Manufacturer's designation for each pane of glazing in hazardous location:

- Who applied the designation,
- Type of glass
- Safety glazing standard
- Visible in the final installation
- Label permitted



Fig 14. Logo close to ANSI Code in lower right corner.

Exceptions:

- Certificate, affidavit or other evidence (not tempered)
- Tempered spandrel glass - removable paper

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Identification of safety glazing

Multiple assemblies

- Individual panes ≤ 1 sq. ft.
- \geq one pane identified
- Other panes labeled
 - CPSC 16 CFR 1201 or
 - ANSI Z97.1

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Safety Glazing

Louvered Windows or Jalousies

- Regular, float, wired or patterned glass in jalousies and louvered windows:
 - $\geq 3/16$ in. thick nominal and
 - ≤ 48 in.) in length
- Exposed glass edges shall be smooth.
- Wired glass with wire exposed on longitudinal edges prohibited



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Human Impact Loads

- Glazed areas in hazardous locations shall pass the test requirements
- Exceptions:
 - Mirrors and other glass panels mounted or hung on a surface that provides a continuous backing support
 - Glass unit masonry
 - IRC: Louvered windows and jalousies
 - IBC: Plastic glazing shall meet the weathering requirements of ANSI Z97.1.



Safety Glazing

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Impact Test

- CPSC 16 CFR 1201
 - Glazing shall comply with the test criteria for Category II unless otherwise indicated in Table
- Exception:
 - ANSI Z97.1
 - Glazing not in doors or enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers
 - Glazing shall comply with the test criteria for Class A unless indicated in Table



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Safety Glazing

Doors

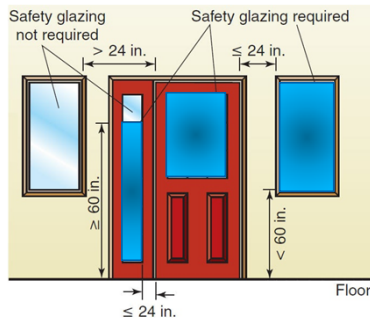
- Glazing in fixed and operable panels of swinging, sliding and bi-fold doors
- Exceptions:
 - Glazed openings where a 3-in.-diameter sphere cannot pass through
 - Decorative glazing
- IBC Exceptions
 - Curved glazed panels in revolving doors
 - Commercial refrigerated cabinet glazed doors



Safety Glazing

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Adjacent to Doors



- Within 24 in. horizontally of door in closed position
- < 60 in. above floor

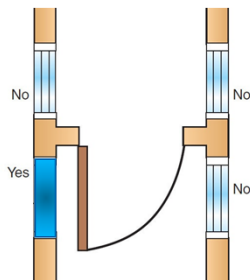


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Adjacent to Doors

- Glazing installed perpendicular to a door
- < 24 inches from door
- Safety glazing if on hinge side of an in-swinging door



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Safety Glazing

Adjacent to Doors

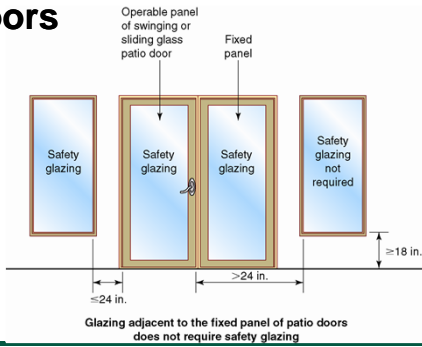
- Exceptions:
 - Decorative glazing
 - Intervening wall or other permanent barrier between door and glazing
 - Access through door is to closet or storage area ≤ 3 ft. in depth
 - Glazing that is adjacent to the fixed panel of patio doors



Safety Glazing

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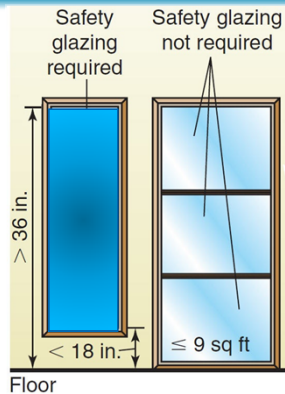
R308.4.2 – Glazing adjacent doors



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Windows

- Exposed area of an individual pane > 9 sq. ft.
- Bottom edge of glazing < 18 in. above floor
- Top edge of glazing > 36 in. above floor
- Walking surface within 36 in.
 - Exception:
 - Horizontal rail installed 34 to 38 in. above walking surface



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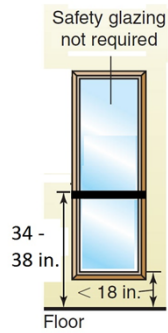
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Safety Glazing

Windows

Exceptions

- Decorative glazing
- Horizontal rail on accessible side 34 to 38 in. above walking surface.
 - Withstand horizontal load of 50 lb. per lin. ft. without contacting glass
 - $\geq 1\frac{1}{2}$ in. in height.
- Outboard panes ≥ 25 feet above any grade, roof, walking surface or other surface adjacent to the glass exterior

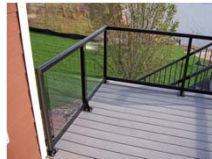


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Glazing in guards and railings

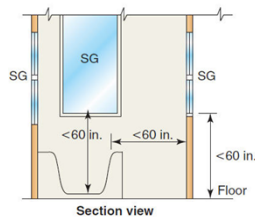
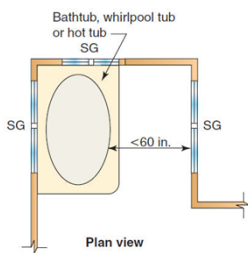
- Glazing used in guards require a safety factor of 4
 - 4 x 50 psf (minimum design load for infill components) = 200 psf



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Wet Surfaces



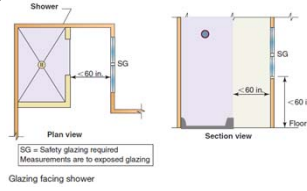
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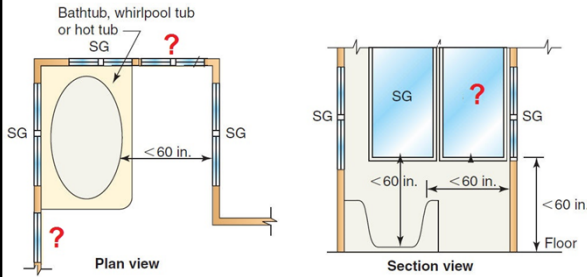
Wet Surfaces

- Not safety glazing when \geq 60 in. from edge of
 - Shower
 - Sauna
 - Steam room
 - Bathtub
 - Hot tub
 - Spa
 - Whirlpool
 - Swimming pool



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Wet Surfaces



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Wet Surfaces

- Glazing in walls or fences near swimming pools
 - \leq 60 in. of water's edge
 - $<$ 60 in. above walking surface

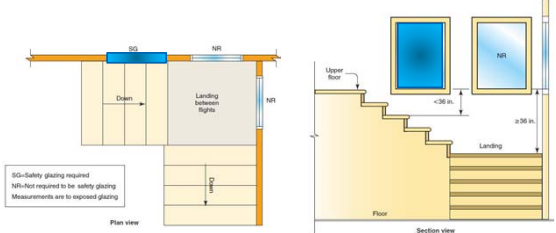


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Safety Glazing

Adjacent Stairs and Ramps IRC



ICC-safety glazing required
NR-floor required to be safety glazing
Measurements are to exposed glazing

Plan view

Section view

Upper floor

Floor

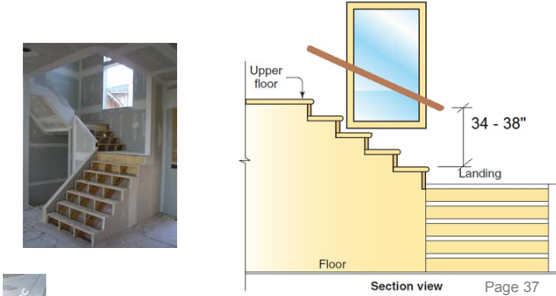
Landing

$< 36 \text{ in.}$

$\ge 36 \text{ in.}$

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Adjacent Stairs and Ramps IRC



Upper floor

Floor

Landing

$34 - 38 \text{ in.}$

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Adjacent Stairs and Ramps IBC

- < 60 inches above the plane of the adjacent walking surface of stairways, landings between flights of stairs and ramps
- Exceptions:
 - A guard and the plane of the glass > 18 inches (457 mm) from the railing
 - Glazing ≥ 36 inches horizontally from the walking surface

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Safety Glazing

Adjacent Bottom Stair Landing IRC

- Applies to the area in front of the plane of the bottom tread.

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

≤ 60 in.

60 in.

60 in.

60 in.

Glazing adjacent to bottom stair landing

International Code Council

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Adjacent Bottom Stair Landing IRC

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

≤ 60 in.

60 in.

60 in.

60 in.

Glazing adjacent to bottom stair landing

International Code Council

Upper floor

NR

≥ 36 in.

Landing

Section view

Down

NR

NR

Safety Glazing

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Adjacent Bottom Stair Landing IRC

SG = Safety glazing required
NR = Not required to be safety glazing

< 60 in.

≥ 60 in.

< 36 in.

SG

SG

NR

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Safety Glazing

Adjacent Bottom Stair Landing IBC

- Glazing < 60 inches above the landing and within a 60-inch horizontal arc from the bottom tread nosing
- Exception:
 - Glazing that is protected by a guard where the plane of the glass is >18 inches from the guard