



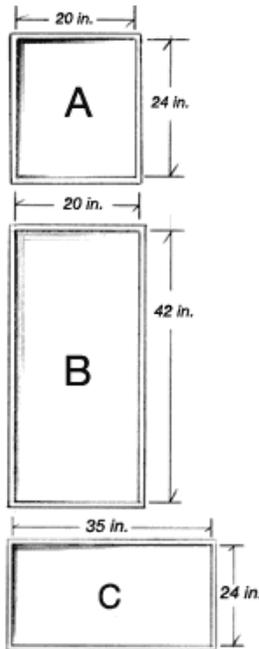
## Window Installation Requirements

### **PERMIT REQUIREMENTS:**

Window installations, whether new or replacement / retrofit, require a building permit in the City of San Carlos.

### **EGRESS REQUIREMENTS:**

At least one window in each bedroom must be of sufficient size to permit the occupants to escape a fire and also allow a fully outfitted firefighter to enter.



An egress window must satisfy all of the following requirements:

- Minimum width of opening: 20-inches
- Minimum height of opening: 24-inches
- Minimum net clear opening: 5.7 square feet (5.0 square for ground floor residential windows no greater than 44" above interior and exterior grade)
- Maximum height to bottom of window opening above interior floor surface: 44-inches

At first glance, you might assume that a 20-inch by 24-inch window opening (**A**) would meet egress. Those dimensions only yield a net clear opening of 3.3 square feet and do not meet egress. To achieve the required net clear opening of 5.7 square feet, a 20-inch wide window (**B**) would have to be 42-inches high. Likewise, a 24-inch high window (**C**) would have to be 35-inches wide to meet the 5.7 square foot opening requirement.

### **NATURAL LIGHT & VENT REQUIREMENTS:**

Every space intended for human occupancy shall be provided with natural light by means of exterior glazing. The minimum net glazed area for natural light shall not be less than 8 percent of the floor area of the room serve. Natural vent shall be achieved by window openings in the room served that are no less than 4 percent of the floor area. Window replacements in existing framed openings need not comply with new code requirements provided the existing windows were in compliance when the home was originally built.

### **ENERGY EFFICIENCY REQUIREMENTS:**

Windows shall be double-pane with a maximum U-value of 0.40.

## **TEMPERED (SAFETY) GLAZING REQUIREMENTS:**

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The following shall be considered specific hazardous locations requiring safety glazing material:

- 1) Glazing in all fixed and operable panels of swinging, sliding and bi-fold doors.

### **Exceptions:**

1. Glazed openings of a size through which a 3-inch diameter sphere is unable to pass.
  2. Decorative glazing.
- 2) Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24-inch arc of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface.

### **Exceptions:**

1. Decorative glazing.
  2. When there is an intervening wall or other permanent barrier between the door and the glazing.
  3. Glazing in walls on the latch side of and perpendicular to the plane of the door in a closed position.
  4. Glazing adjacent to a door where access through the door is to a closet or storage area 3 feet or less in depth.
  5. Glazing that is adjacent to the fixed panel of patio doors.
- 3) Glazing in an individual fixed or operable panel that meets all of the following conditions:
    1. The exposed area of an individual pane is larger than 9 square feet; and
    2. The bottom edge of glazing less than 18-inches above floor; and
    3. The top edge of glazing is more than 36-inches above floor; and
    4. One or more walking surfaces are within 36-inches, measured horizontally and in a straight line, of the glazing.

### **Exceptions:**

1. Decorative glazing.
  2. When a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot without contacting the glass and be a minimum of 1 ½ inches in cross sectional height.
  3. Outboard panes in insulating glass units and other multiple glazed panels when the bottom edge of the glass is 25 feet or more above grade, a roof, walking surfaces or other horizontal (within 45 degrees of horizontal ) surface adjacent to the glass exterior.
- 4) All glazing in railings regardless of area or height above a walking surface. Included are structural baluster panels and nonstructural infill panels.
  - 5) Glazing in enclosures for or walls facing hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers where the bottom exposed edge of the glazing is less than 60 inches measured vertically above any standing or walking surface.

**Exception:** Glazing that is more than 60 inches, measured horizontally and in a straight line, from the water's edge of a hot tub, whirlpool or bathtub.

- 6) Glazing in walls and fences adjacent to indoor and outdoor swimming pools, hot tubs and spas where the bottom edge of the glazing is less than 60 inches above a walking surface and within 60 inches, measured horizontally and in a straight line, of the water's edge. This shall apply to single glazing and all panes in multiple glazing.
- 7) Glazing adjacent to stairways, landing and ramps within 36 inches horizontally of a walking surface when the exposed surface of the glazing is less than 60 inches above the plane of the adjacent walking surface.

### **Exceptions:**

1. When a horizontal rail is installed on the accessible side(s) of the glazing 34 to 38 inches above the walking surface. The rail shall be capable of withstanding a horizontal load of 50 pounds per linear foot without contacting the glass and be a minimum of 1 ½ inches in cross sectional height.
  2. The side of the stairway has a guardrail or handrail, including balusters or in-fill panels, complying with Sections R311.7.6 and R312 and the plane of the glazing is more than 18 inches from the railing; or
  3. When a solid or panel extends from the plane of the adjacent walking surface to 34 inches to 36 inches above the walking surface and the construction at the top of that wall or panel is capable of withstanding the same horizontal load as a guard.
- 8) Glazing adjacent to stairways within 60 inches horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glazing is less than 60 inches above the nose of the tread.

### **Exceptions:**

1. The side of the stairway has a guardrail or handrail, including balusters or in-fill panels, complying with Sections R311.7.6 and R312 and the plane of the glazing is more than 18 inches from the railing; or
2. When a solid wall or panel extends from the plane of the adjacent walking surface to 34 inches to 36 inches above the walking surface and the construction at the top of that wall or panel is capable of withstanding the same horizontal load as a guard.