



GUIDELINES FOR THE REPLACEMENT OF RESIDENTIAL WINDOWS & DOORS

(Based mainly upon the requirements of the 2013 California Residential Code)

Because of the risk of fire, the building and housing codes require that every bedroom in a dwelling have a direct emergency exit to the outside through an appropriately sized window or door both for egress and for rescue. Therefore, all new replacement windows, including 'retrofit' windows, and/or doors installed in any dwelling must not reduce the effective, lawful means of egress that was required at the time the dwelling was originally built. **A replacement window of the same nominal size as that of the window being replaced may be installed in the existing framed opening provided it does not substantially reduce the size of the opening or raise the finished sill height.** "Substantially" is defined as a condition in which the manufactured frame may be described by the manufacturer as the same nominal size as the window it replaces but which reduces the opening because the jambs and sill are abnormally large as compared with similarly sized windows currently being manufactured. It is still recommended that owners and builders strive to meet current code requirements when possible. The current California Residential Code requirements are as follows:

Windows:

Every sleeping room, basement or habitable attic shall have at least one operable window or exterior door approved for emergency escape or rescue. The windows shall be operable from the inside to provide a full, clear opening without the use of special tools. All escape or rescue windows from sleeping rooms shall have a minimum net clear opening of 5.7 square feet. The minimum net clear opening height dimension shall be 24 inches. The minimum clear opening width dimension shall be 20 inches. Where windows are provided as a means of escape or rescue, they shall have a finished sill height not more than 44 inches above the finished floor. *CRC R310.1 (& Definitions)*

EXCEPTION: Grade floor openings located such that the sill height of the opening is not more than 44 inches above or below the exterior grade shall have a minimum net clear opening of 5 square feet.

Bars, grills, grates or similar devices may be installed on emergency escape or rescue windows, doors or window wells provided the devices are equipped with approved release mechanisms which are operable from the inside without the use of a key or special knowledge or effort; and the building is equipped with approved smoke detectors. *CRC R310.4*

Where the opening of the sill portion of an operable window is located more than 72 inches above the finished exterior grade or other surface below, the lowest part of the clear opening of the window shall be a min. of 24 inches above the finished floor surface of the room. Glazing between the floor and a height of 24 inches shall be fixed or have openings such that a 4 inch sphere cannot pass through, or windows provided with approved guards. *CRC R312.2*

Windows shall also provide the required amounts of light and ventilation for the area of the habitable rooms. All habitable rooms within a dwelling unit shall be provided with natural light by means of exterior glazed openings with an area not less than 8% of the floor area of such rooms. All habitable rooms within a dwelling unit shall be provided with natural ventilation by means of operable exterior windows with an area not less than 4% of the floor area of such rooms. All ventilation openings shall have bug screens. *CRC R303.1*

EXCEPTION: Windows may be eliminated if the room is provided with approved artificial light and a whole house mechanical ventilation and the room is not used for sleeping purposes.

Bathrooms, toilet compartments and similar rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet, one-half of which must be operable. *CRC R303.3*

EXCEPTION: Bathrooms and water closet rooms with 50 cfm exhaust fans. *CRC R303.3*

Standard wooden window frames are not allowed in shower enclosures. *CRC R307.2*

Doors:

Where a door is provided for egress in lieu of a window from a sleeping room, the door shall be a minimum size of 3 ft. by 6 ft., 8 inch, exterior grade door, openable without special knowledge or effort. When such doors are provided with manually operated deadbolts they must have a thumb latch or similar operable device on the inside surface of the door and must be installed at not more than 48 inches from the floor. Double cylinder keyed deadbolts or locks requiring a removable tool or key for their operation are prohibited.

CRC R311.2

Under no circumstances shall a private garage have any opening into a bedroom. *CRC R302.5.1*

Safety Glazing:

Glazing in the following areas are subject to human impact and shall either be tempered or laminated safety glass, or approved plastic, and shall be labeled as such. *CRC R308.1*

1. Glazing in all doors including sliding glass doors and storm doors.

EXCEPTION: Openings in a door through which a 3-inch-diameter sphere will not pass.
CRC R308.4.1

2. Glazing, operable or fixed, adjacent to a door where the nearest exposed edge of the glazing is within a 24-inch arc of either vertical edge of the door in a closed position and where the bottom exposed edge of the glazing is less than 60 inches above the floor. *CRC R308.4.2*

EXCEPTION: Glazing where there is an intervening wall or other permanent barrier between the door and the glazing. Glazing in walls on the latch side of and perpendicular to the plane of the closed door.

3. Glazing in walls enclosing stairway landings or within 5 feet of the bottom and the top of stairways (as measured horizontally from the nose of the first and last tread respectively) where the bottom edge of the glass is less than 60 inches above a floor. *CRC R308.4(6 & 7)*
4. Glazing in shower doors and enclosures, or adjacent to bath tubs. *CRC R308.4.5*
5. Safety glazing is also required in all guardrails and in individual panels which are greater than 9 sq. ft. of area, the bottom edge of which is less than 18 inches AFF, the top edge of which is greater than 36 inches AFF, and is within 36" horizontally of any walking surface. *CRC R308.4.3*

Energy Requirements:

In addition to building requirements all new windows and exterior doors must meet the energy performance standards of California's Energy Code. New windows must be dual-glazed and meet the LowE₂ standard and have a maximum U-factor of .32 and an SGHC-factor of .25, or less. **Exception:** Replacement windows no greater than 75 square feet in aggregate area may have a maximum U-factor of .40 and an SGHC factor of .35, or less. Doors must be solid core exterior grade doors. *CEC 150.1(c)3A & 4; 150.2(b)1B, exc.*

Fire Requirements:

Due to new laws regulating buildings located within fire hazard zones (WUI), the fire district and/or the building and safety division may require that all new windows have at least one pane tempered. *CBC 708A.2.1.1 & 708A.3.1* (For more information on fire requirements go to the Marin County Fire website:

<http://www.marincounty.org/depts/fr> -or- to the Office of the State Fire Marshal website:
<http://osfm.fire.ca.gov/codedevelopment/wildfireprotection.php>)