

CITY OF MILPITAS

Building & Safety Department
455 E. Calaveras Blvd.
Milpitas, CA 95035
408-586-3240
www.ci.milpitas.ca.gov



RESIDENTIAL WINDOW & DOOR REPLACEMENT

1. PERMIT INFORMATION:

- The replacement of exterior windows including using retrofit windows, the main entry door and the door between the house and the garage requires a building permit.
- New windows or doors, and changes in the width or location of existing windows or doors, must be reviewed and approved by the Building & Safety Department and the Planning Division. The permit will have to be obtained in person at the Permit Center and plans will be required to obtain the permit. Refer to the "*Residential Remodel & Repair Plan Requirements*" handout for additional information on the preparation of the plans.
- Homeowners Association:** If the property is regulated by a Home Owners Association, the homeowner is responsible to obtain approval from the Association prior to the commencement of any work.
- A Building Permit may be issued only to a State of California Licensed Contractor or the Homeowner.
- If the work is performed by the Homeowner personally or by his/her workers, and an inspection indicates the work cannot be completed satisfactorily, then a licensed contractor must perform the work.
- If the Homeowner hires workers, State Law requires the Homeowner to obtain Worker's Compensation Insurance. Proof of this insurance is required prior to inspection.

2. INSTALLATION REQUIREMENTS:

- Building Codes:** All work must comply with the 2013 California Residential Code (CRC) or 2013 California Building Code, 2010 California Energy Code based upon 2008 Building Energy Efficiency Standards (CEnc) (2013 becomes effective 7/1/14), 2013 California Green Building Code and 2013 Milpitas Municipal Code (MMC).
- If the existing opening width is NOT altered, the new window or door must comply with current requirements for new construction even if the sill must be lowered. It is possible, therefore, that the style of window needs to be changed, (for example, a non-complying single hung style would need to be changed to a complying casement style).
- If opening width IS altered, all aspects of the window or door must comply with the current Building Code requirements.

DOORS

- At least one egress door shall be provided for each dwelling unit. This is typically the front entry door. The egress door shall be side-hinged, and shall provide a minimum clear width of 32 inches when measured between the face of the door and the stop, with the open 90 degrees. The minimum clear height of the door opening shall not be less than 78 inches measured from the top of the threshold to the bottom of the stop. Egress doors shall be readily openable from inside the dwelling without the use of a key or special knowledge or effort. (CRC R311.2)
- There shall be a landing or floor on each side of each exterior door. The width of each landing shall not be less than the door served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel. Exterior landings shall be permitted to have a slope not to exceed ¼ unit vertical in 12 units horizontal (2 percent). (CRC R311.3)

- Landings or floors at the required egress door shall not be more than 1 ½ inches lower than the top of the threshold. Exception: The exterior landing or floor shall not be more than 7 ¾ inches below the top of the threshold provided the door does not swing over the landing or floor. (CRC R311.3.1)
- When exterior landings or floors serving the required egress door are not at grade, they shall be provided with access to grade by means of a ramp in accordance with CRC R311.8 or a stairway in accordance with CRC R311.7 (CRC R311.3.1).
- Doors other than the required egress door shall be provided with landings or floors not more than 7 ¾ inches below the top of the threshold. Exception: A landing is not required where a stairway of two or fewer risers is located on the exterior side of the door, provided the door does not swing over the stairway. (CRC 311.3.2)
- Storm and screen doors shall be permitted to swing over all exterior stairs and landings (CRC R311.3.3).
- Doors installed between the house and garage shall be either solid wood or solid or honeycomb core steel doors not less than 1 3/8" thick, or 20 minute doors, unless the residence and the garage are protected by an automatic fire sprinkler system. Doors shall be self-closing and self-latching even with a sprinkler system. Doors from a garage opening directly into a bedroom are prohibited. (CRC R302.5.1)

WINDOWS

- All habitable rooms shall have natural light through an aggregate glazing area of not less 8% of the floor area of such rooms, or provided with artificial light providing an average of 6 foot candles (65 lux) over the area of the room at a height of 30" above the floor (CRC R303.1).
- All habitable rooms shall have natural ventilation through exterior openable windows, doors, louvers, skylights or other approved means which area totals a minimum of 4% of the floor area being ventilated, or provided with approved mechanical ventilation system capable of producing 0.35 air changes per hour in the room, or a whole-house mechanical ventilation system is installed capable of supplying outdoor ventilation air of 15 cubic feet per minute (cfm) per occupant computed on the basis of two occupants for the first bedroom and one occupant for each additional bedroom. Openings shall be provided with ready access or shall otherwise be readily controllable by the building occupants. (CRC R303.1)
 - Use of sunroom additions and patio covers shall be permitted for natural ventilation if in excess of 40 percent of the exterior sunroom walls are open, or are enclosed only by insect screening. (CRC R303.1.)
 - Openings required for light and/or ventilation shall be permitted to open into a thermally isolated sunroom addition or patio cover, provided that there is an openable area between the adjoining room and the sunroom addition or patio cover of not less than one-tenth of the floor area of the interior room but not less than 20 square feet. The minimum openable area to the outdoors shall be based upon the total floor area being ventilated. (CRC R303.2)
 - For the purpose of determining light and ventilation requirements, any room shall be considered as a portion of an adjoining room when at least one-half of the area of the common wall is open and unobstructed and provides an opening of not less than one-tenth of the floor area of the interior room but not less than 25 square feet. (CRC R303.2)
 - Bathrooms, water closet compartments and other similar rooms shall be provided with aggregate glazing area of not less than 3 square feet, one-half of which must be openable, or artificial light and a mechanical ventilation system shall be provided. The minimum ventilation rate shall be 50 cubic feet per minute for intermittent ventilation or 25 cubic feet per minute for continuous ventilation. Ventilation air from the space shall be exhausted directly to outside. (CRC R303.3)

- Glazing must be safety glass if located: (CRC R308.4)
 - 1. In a fixed or operable panel of a swinging, sliding or bifold door, except glazed openings of a size through which a 3 inch diameter sphere is unable to pass and decorative glazing.
 - 2. 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, except:
 - Decorative glazing.
 - When 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 door in a closed position.
 - Glazing adjacent to a door where access through the door is to a closet or storage area 3 feet or less in depth.
 - Glazing that is adjacent to the fixed panel of patio doors.
 - 3. In an individual fixed or operable panel that meets all of the following conditions (walk-through hazard):
 - The exposed area of an individual pane is larger than 9 square feet; and
 - The bottom edge of the glazing is less than 18 inches above the floor; and
 - The top edge of the glazing is more than 36 inches above the floor; and
 - One or more walking surfaces are within 36 inches, measured horizontally and in a straight line, of the glazing.
 - Exceptions:
 - 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.
 - 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 surface adjacent to the glass exterior.
 - Decorative glazing.
 - 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 waters edge of a hot tub, whirlpool or bathtub.
 - 7. Glazing adjacent to stairways, landings 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:
 - When a 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.
 - 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
 - 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 the 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:
 - 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 glass is more than 18 inches from the railing; or
 - 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 the wall or panel is capable of withstanding the same horizontal load as a guard.
- ☐ Safety glazing shall pass the impact test requirements of CPSC 16 CFR 1201, Category I or II as indicated in the following table: (CRC 308.3.)

MINIMUM CATEGORY CLASSIFICATION OF GLAZING USING CPSC 16 CFR 1201					
EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE	GLAZING IN STORM OR COMBINATION DOORS (Category Class)	GLAZING IN DOORS (Category Class)	GLAZED PANELS REGULATED BY R308.4 ITEM 7 (Category Class)	GLAZING IN DOORS AND ENCLOSURES REGULATED BY R308.4 ITEM 5 (Category Class)	SLIDING GLASS PATIO DOORS (Category Class)
9 square feet or less	I	I	No requirement	II	II
More than 9 square feet	II	II	II	II	II

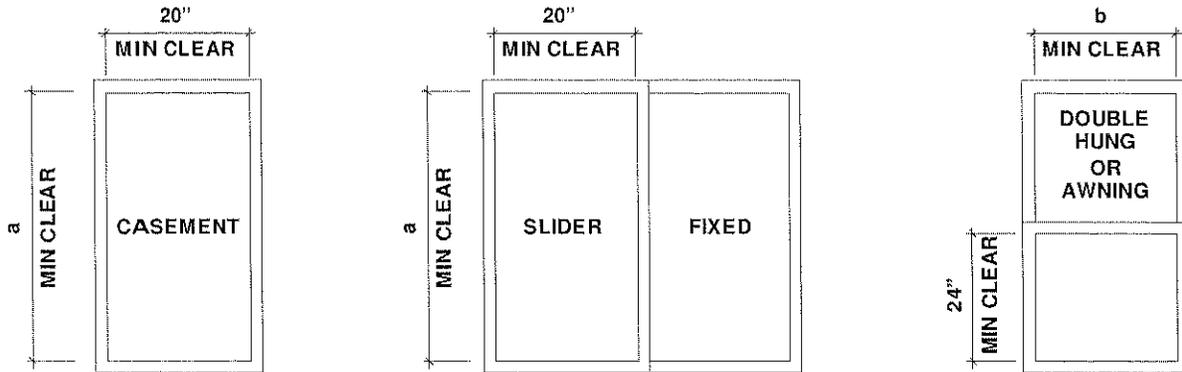
- Exception: Glazing NOT in doors or enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers shall be permitted to be tested in accordance with ANSI Z97.1. Glazing shall comply with the test criteria for Class A or B as indicated in the following table:

MINIMUM CATEGORY CLASSIFICATION OF GLAZING USING ANSI Z97.1		
EXPOSED SURFACE AREA OF ONE SIDE OF ONE LITE	GLAZED PANELS REGULATED BY R308.4 ITEM 7 (Category Class)	DOORS AND ENCLOSURES REGULATED BY R308.4 ITEM 5 (Category Class)
9 square feet or less	No requirement	A
More than 9 square feet	A	A

3. EMERGENCY EGRESS AND RESCUE REQUIREMENTS:

- ☐ Every sleeping room shall have at least one operable emergency escape and rescue opening (window or door). Where emergency escape and rescue openings are provided the bottom of the opening shall not be more than 44 inches above the floor. The net clear opening dimensions required shall be obtained by the normal operation of the emergency escape and rescue opening from the inside. Emergency escape and rescue openings shall open directly into a public way, or to a yard or court that opens to a public way. (CRC R310.1)
- ☐ Emergency escape and rescue openings shall be maintained free of any obstructions other than those allowed by the Code and shall be operational from the inside of the room without the use of keys, tools or special knowledge (CRC R310.1.4)

- All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet (5.0 at grade level), with a minimum net clear opening height of 24" and width of 20". *Note:* In order to meet the minimum clear opening of 5.7 square feet, either the width or height, or both, must exceed the minimum dimension (see figure below). (CRC R310.1.1, .2 & .3)



a = 36" at grade (5.0 sf), 41" above grade (5.7 sf)
 b = 30" at grade (5.0 sf), 34 3/16" above grade (5.7 sf)

- Bars, grills, covers, screens or similar devices are permitted to be placed over emergency escape and rescue openings provided the minimum net clear opening size complies with the above, and such devices shall be releasable or removable from the inside without the use of a key, tool, special knowledge or force greater than that which is required for normal operation of the escape and rescue opening. The release mechanism shall be maintained operable at all times. Where security bars (burglar bars) are installed on emergency egress and rescue windows or doors, such devices shall comply with California Building Standards Code, Part 12, Chapter 12-3 and other applicable provisions of the Code as well as MMC Title V, Chapter 304. (CRC R310.4)
- When a replacement window is installed in an existing window frame, the new window must meet all of the window dimensions noted above as much as possible within the scope of work.

4. ENERGY REQUIREMENTS:

- Windows must have a maximum U-factor of 0.32 and a SHGC of 0.25 [CEnC 152(b)1(B)].
- Windows shall have a label which shall not be removed before inspection by the City listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC, and certifying that the air leakage requirements are met (CEnC 116(a)4).
- Any door whose surface area is more than one-half glass is a fenestration product and must comply with the requirements for windows (CEnC 101).
- Up to 3 Sq. Ft. of the glazing in doors with dual-pane diffusers may have an assumed U-factor equivalent of 0.40 (CEnC 151 (f)3).
- Manufactured windows and exterior doors must be certified as meeting an air infiltration rate not exceeding 0.3 cfm/ft² of window or door area (CEnC 116(a)1).
- Windows and exterior doors must be weather-stripped and have all joints and penetrations caulked and sealed (CEnC 117).

- If fenestration area is to be increased, the total fenestration area shall not exceed 20% of the conditioned floor area [CEnC 152(b)1(A)].
- If fenestration area is to be increased, the total fenestration area facing west shall not exceed 5% of the conditioned floor area [CEnC 152(b)1(A)].
- Alterations that add fenestration area of up to 50 square feet shall not be required to meet the total fenestration area (20%) and west-facing fenestration area (5%) requirements of Sections 151(f)3B and C. The existing west-facing fenestration area shall not be increased by more than 50 square feet. (CEnC 152(b)1(A) exc)
- Title 24 Energy Compliance Reports:** The following forms must be filled out and submitted with the permit application, or for online permits, attached to the permit:
 - Mandatory Measures form MF-1R.
 - Certificate of Compliance form CF-1R ALT.
 - Installation Certificate CF-6R-ENV-01.

5. SMOKE ALARMS, CARBON MONOXIDE ALARMS & SPARK ARRESTERS:

- In single family and multi-family residences (including townhomes, condominiums and apartments), installation of smoke alarms, carbon monoxide alarms and spark arresters on all chimneys is required prior to the final inspection as follows:
 - **Smoke Alarms** listed in accordance with U.L. 217 and listed and approved by the California State Fire Marshal must be installed if they do not already exist in each sleeping room, outside each separate sleeping area in the immediate vicinity of the bedrooms and on each story of the dwelling. For R-3.1 occupancies, refer to CBC Section 907.2.11.2 for additional requirements. (CRC R314)
 - **Power source:** Smoke alarms shall receive their primary power from the building wiring and shall be equipped with a battery backup. Smoke alarms shall emit a signal when the batteries are low. Alarm wiring shall be directly connected to the permanent building wiring without a disconnecting switch other than as required for overcurrent protection. Smoke alarms are permitted to be solely battery operated in existing buildings where no construction is taking place and in existing areas of buildings undergoing alterations or repairs that do not result in the removal of interior walls or ceiling finishes exposing the structure, unless there is an attic or crawl space available which could provide access for building wiring without the removal of interior finishes.
 - **Interconnection:** Where more than one smoke alarm is required to be installed within an individual dwelling unit or sleeping unit, the smoke alarms shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit, except interconnection is not required in buildings that are not undergoing alterations, repairs or construction of any kind and where alterations or repairs do not result in the removal of interior wall or ceiling finishes exposing the structure, unless there is an attic or crawl space available which could provide access for interconnection without the removal of interior finishes. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed.

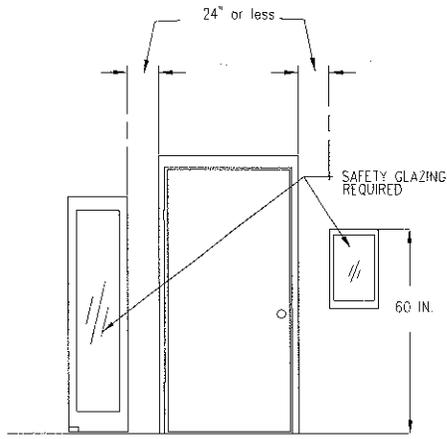
- **Carbon Monoxide Alarms:** An approved carbon monoxide alarm listed as complying with UL 2034, approved and listed by the California State Fire Marshal, installed and maintained in accordance with NFPA 720 and the manufacturer's instructions shall be installed if they do not already exist in existing dwellings or sleeping units having a fossil fuel-burning heater or appliance, fireplace or an attached garage as follows: outside each separate dwelling unit sleeping area in the immediate vicinity of bedroom(s) and on every level of dwelling unit. Carbon monoxide detection systems that include carbon monoxide detectors and audible notification appliances, installed and maintained as required for carbon monoxide alarms and NFPA 720 shall be permitted. The carbon monoxide detectors shall be listed as complying with UL 2075. (CRC R315)
 - **Power supply and Interconnection:** Refer to the requirements above for smoke alarms for connection to the building wiring, exceptions allowing battery only alarms and interconnection of the alarms when more than one is installed.
- **Spark arresters:** When the value of the work exceeds \$1,000, a spark arrester must be installed on fireplace chimneys if one does not already exist per MMC Section II-3-2.06. Spark arresters shall be constructed in conformance with CRC Section 1003.9.1.

6. INSPECTION PROCEDURES:

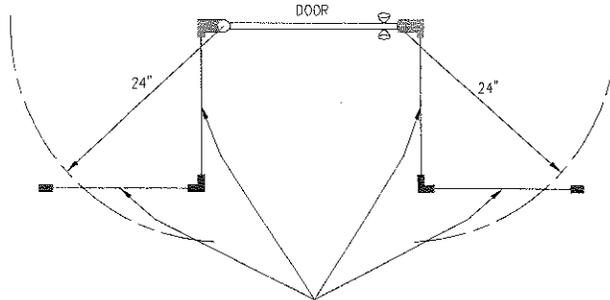
- Typically, at least two inspections are required, a rough after the new window has been installed but before the flashing and nailing fin are covered with trim and a final. For each inspection, the Permit Card with the Energy Compliance Report forms completely filled and out attached, and the Approved Job Copy of the Drawings (if any) must be presented to the inspector. Permits expire 180 days after issuance or last inspection passed, whichever is the latest.

7. QUESTIONS:

- If you have any questions regarding your project contact the Building & Safety Department at (408) 586-3240.

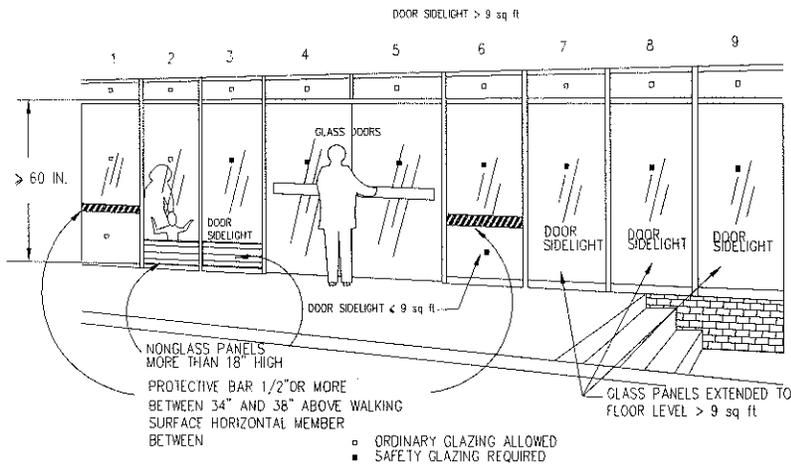


GLASS SIDELIGHTS
(REFER TO CBC 2406.3)

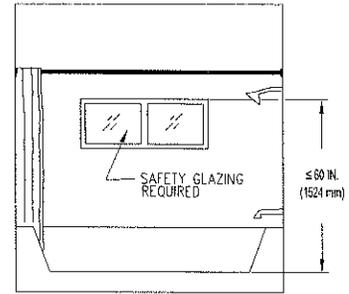


SAFETY GLAZING REQUIRED FOR ALL PANELS
WITH EXPOSED EDGES LESS THAN 60 IN. ABOVE
WALKING SURFACE

GLASS IN SIDELIGHTS



HAZARDOUS LOCATIONS



CBC 2406.3 (5)

GLAZING WITHIN A SHOWER ENCLOSURE

REV.	DATE	BY:	SCALE:
			N.T.S.
			DATE:
			OCT. 2007
			DRAWN BY:
			Henry R.
			REVIEWED BY:
			LEON SHEYMAN

City of Milpitas
BUILDING AND SAFETY DEPARTMENT
SAFETY GLAZING

SHEET
1
OF 1 SHEETS



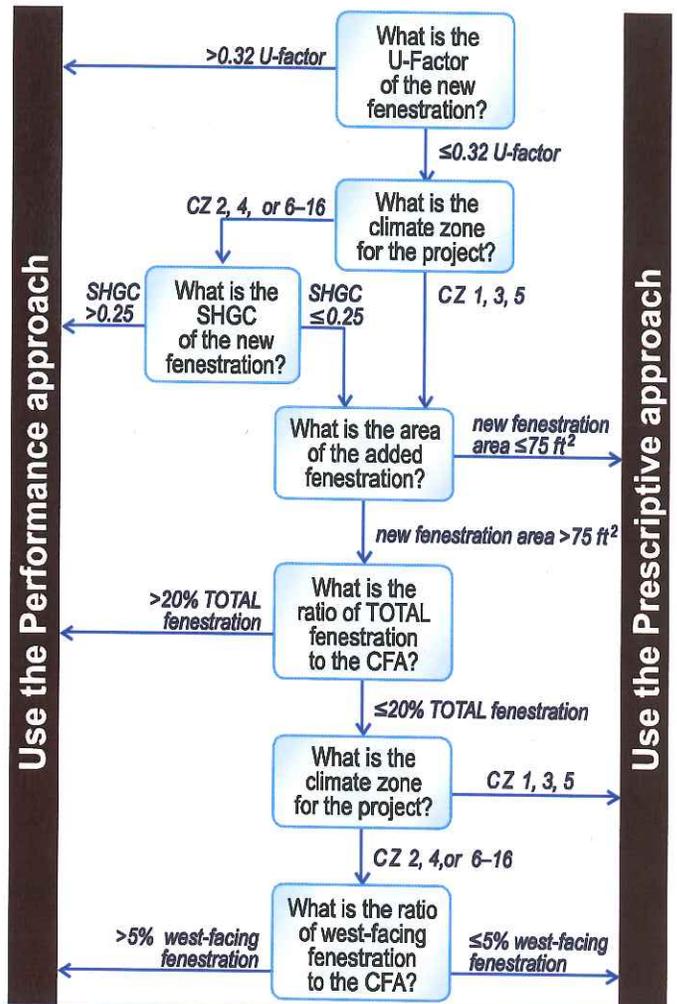
Fenestration Alterations

Assessing Your Project

Title 24 Prescriptive requirements for alterations affecting fenestration (windows, skylights, and doors with >3 ft² of glass) vary depending upon the fenestration added or replaced in the project.

- + If you add more than 75 ft² to the building's fenestration area, the new fenestration must meet requirements for TOTAL fenestration area and WEST-facing fenestration area, as well as the U-factor and SHGC for the climate zone.
- + If you add fenestration area up to 75 ft² — or if you add up to 16 sq. ft. of new skylight area with U-factor ≤0.55 and SHGC ≤0.30 — the total/west-facing fenestration area requirements do not apply. (A skylight is fenestration installed on a roof <60° from the horizontal.)
- + If you replace existing fenestration, the replaced fenestration must meet the area-weighted U-factor and SHGC requirements of Package A. (See Prescriptive Requirements tables on the next page.)
- + Exceptions are:
 - ◇ Replacements of vertical fenestration up to 75 ft² will comply with a maximum U-factor of 0.40 in climate zones 1-16, and a maximum SHGC of 0.35 in climate zones 2, 4, and 6-16.
 - ◇ Replaced skylights are allowed a maximum U-factor of 0.55, and a maximum SHGC of 0.30.
- + If the project does not meet the prescriptive requirements:
 - ◇ Adjust your project — For example, purchase more energy efficient windows or add less fenestration area.
 - OR
 - ◇ Use the performance approach — This requires using approved energy modeling software.
- + Check with an energy consultant before removing any existing windows or other feature.
 - ◇ You may need to use the energy efficiency values from your existing features to demonstrate compliance with the Performance approach. This would require verification by a HERS Rater of the existing features before they are changed.

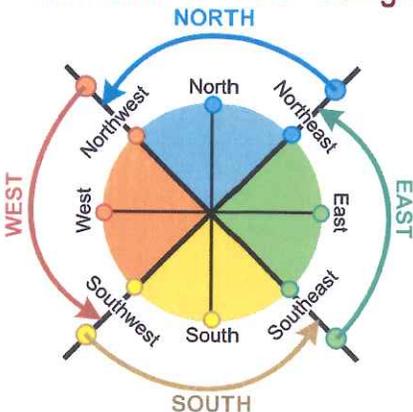
Prescriptive or Performance? *



* This flowchart depicts the most common decisions regarding fenestration alteration projects. Exceptions may apply to projects that have small glazing areas and use efficient fenestration products. For example, if the fenestration area is ≤10 ft² or 0.5% of the Conditioned Floor Area (CFA), whichever is larger, it is exempt from the maximum U-factor requirement. As another example, ≤3 ft² of new glazing area installed in doors need to meet neither the U-factor nor the SHGC maximums.

For more information on exemptions, see the Standards §150.0(a), §150.1(c)3, §150.2(b)1A and §150.2(b)1B.

Orientation & West-facing Fenestration



"Orientation" refers to the direction that the fenestration faces.

West-facing fenestration — a consideration in climate zones 2, 4, 6-16 — includes:

- + A window (or a door with glass) that faces from compass orientation 236° to 315°
- + Skylights tilted:
 - ◇ To the west (236° to 315°)
 - ◇ In any direction when the pitch is less than 1:12

Actual Orientation...	... Is Considered
45° east of north to 44° west of north	North-facing
45° north of west to 44° south of west	West-facing
45° west of south to 44° east of south	South-facing
45° south of east to 44° north of east	East-facing

Mandatory Requirements

Whether you use the Prescriptive or Performance approach to demonstrate compliance, new or replacement fenestration must meet both of the following mandatory measures:

- Manufactured fenestration's air infiltration rates must be ≤ 0.3 cfm/ft² of window area at a pressure differential of 75 pascals.
- All new fenestration that separates conditioned space from unconditioned space or outdoors must have a maximum or weighted-average U-factor of 0.58 or lower.

Exception: If your project involves ≤ 10 ft² of fenestration OR the fenestration area is $\leq 0.5\%$ of the total CFA (whichever is greater), it does not need to meet the maximum U-factor requirement.

Prescriptive Requirements

The Prescriptive requirements for fenestration vary by climate zone and the type and area of the fenestration:

More than 75 ft ² additional fenestration area ^A				
Climate Zones	U-Factor ^E	SHGC ^{B,E}	TOTAL Fenestration ^C Area % of CFA ^D	WEST-facing ^C Area % of CFA ^D
1, 3, 5	0.32 or lower	na	20% or less	na
2, 4, 6-16	0.32 or lower	0.25 or lower	20% or less	5% or less

75 ft ² or less additional fenestration area ^A		
Climate Zones	U-Factor ^E	SHGC ^{B,E}
1, 3, 5	0.32 or lower	na
2, 4, 6-16	0.32 or lower	0.25 or lower

16 ft ² or less additional skylight area		
Climate Zones	U-Factor ^E	SHGC ^{B,E}
1, 3, 5	0.55 or lower	na
2, 4, 6-16	0.55 or lower	0.30 or lower

^A Fenestration area is the glass plus the frame. For doors with glass area less than 50% of total door area, consider the "frame" to be two inches on all sides of the glass. For doors with glass area 50% or more of the total door area, count the entire door area as glazing.

^B If the fenestration has qualifying exterior shading (e.g., a permanent awning) the SHGC may be calculated taking that shading into consideration. If you use exterior shading to meet the SHGC requirement, you must submit a CF1R-ENV-03-E: "Solar Heat Gain Coefficient (SHGC) Worksheet."

^C "TOTAL fenestration" is all new fenestration plus existing fenestration that remains after the alteration. See "Orientation and West-facing Fenestration" (reverse side of this sheet) for a definition of west-facing fenestration.

^D "CFA" is conditioned floor area; see §100.1 "Definitions and Rules of Construction" in the Standards for details.

^E Maximum area-weighted average values.

See Exception 3 to Section 150.1(c)3A for fenestration containing chromogenic glazing. (Chromogenic glazing is high performance glazing that is able to vary its transmittance appropriately in response to automatic controls based on the solar intensity. This means it has the potential to improve building energy efficiency compared to standard low-e glazing.)

Repairs

No fenestration energy efficiency requirements apply if you:

- Replace a broken pane of glass, but not the entire window
- Uninstall fenestration components for maintenance or repair and re-install in the same location without increasing the pre-existing energy consumption.

Documentation

Forms

The following forms are required for residential fenestration alterations:

- Permit**
- CF1R-ALT-01-E** — Certificate of Compliance for Residential Alterations
Submitted to the building department by the contractor or the home owner.
- CF1R-ENV-02-E** (if necessary) — Area Weighted Average Calculation Worksheet
Submitted with the CF1R-ALT-01-E when there is more than one type of window and one or more does not meet prescriptive compliance requirements.
- CF1R-ENV-03-E** (if necessary) — Solar Heat Gain Coefficient (SHGC) Worksheet
Submitted with the CF1R-ALT-01-E only if exterior shading devices are used to meet the SHGC requirement.
- CF2R-ENV-01-E** — Certificate of Installation for Fenestration
Completed and signed by the installing contractor and made available for final inspection by building department.

NFRC Labeling

Typically, manufactured windows come with labels indicating that the NFRC (National Fenestration Rating Council) has certified the performance ratings of the window. Leave the labels on the windows until the field inspection is done.

		World's Best Window Co. Millennium 2000+ Vinyl-Clad Wood Frame Double Glazing • Argon Fill • Low E Product Type: Vertical Slider	
ENERGY PERFORMANCE RATINGS			
U-Factor (U.S./I-P)	Solar Heat Gain Coefficient		
0.30	0.30		
ADDITIONAL PERFORMANCE RATINGS			
Visible Transmittance	Air Leakage (U.S./I-P)		
0.51	0.2		
<small>Manufacturer stipulation that these ratings conform to applicable NFRC procedures for determining whole product performance. NFRC ratings are determined for a fixed set of environmental conditions and a specific product size. NFRC does not recommend any product and does not warrant the suitability of any product for any specific use. Consult manufacturer's literature for other product performance information. www.nfrc.org</small>			

Manufactured fenestration not certified by NFRC must use the CEC Default values found in Table 110.6-A and Table 110.6-B in the Standards; documented per §10-111 labeling requirements, or use the equations in Reference Appendix NA6.



FENESTRATION INSTALLATION

CEC-CF2R-ENV-01-E (Revised 06/14)

CF2R-ENV-01-E

CERTIFICATE OF INSTALLATION

(Page 1 of 2)

Fenestration Installation

Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

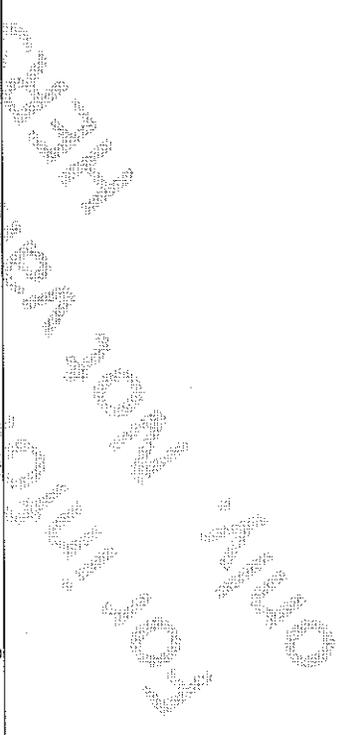
If more than one person has responsibility for installation of the items on this certificate, each person shall prepare and sign a certificate applicable to the portion of construction for which they are responsible. Alternatively, the person with chief responsibility for construction shall prepare and sign this certificate for the entire construction. The signer agrees that all applicable Mandatory Measures were met. Temporary labels are not to be removed before verification by the building inspector.

A. FENESTRATION/GLAZING
Includes all Windows, Skylights, Greenhouse/Bay Windows, and Glazed Doors.

01	02	03	04	05	06	07	08	09	10	11
Tag/ID	Manufacturer / Brand	Fenestration Area (FT ²)	Orientation	Chromogenic	U-factor	SHGC	Source of U-factor and SHGC	Fenestration Type	Exterior Shading Devices (Describe)	Comments/Special Features

B. Fenestration Installation.

01	For new construction, installed window U-factor and SHGC values should be equal to or less than listed on the CFIR.
02	For existing buildings the U-factor and SHGC values should be the same or better than the required Energy Commission prescriptive requirements.
03	Temporary labels should not be removed until verified by the building inspector.
04	The fenestration product manufacturer's installation specifications shall be followed when installing these products. The space between the fenestration product and rough opening shall be completely filled with insulation. If batt insulation is used, it is cut to size and placed properly around the fenestration product.
The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.	





Project Name: Fenestration Installation		Enforcement Agency:	Permit Number:
Dwelling Address:		City:	Zip Code:

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

1. I certify that this Certificate of Installation documentation is accurate and complete.

Documentation Author Name: _____

Documentation Author Company Name: _____

Address: _____

City/State/Zip: _____

Documentation Author Signature: _____

Date Signed: _____

CEA/HERS Certification Identification (if applicable): _____

Phone: _____

RESPONSIBLE PERSON'S DECLARATION STATEMENT

I certify the following under penalty of perjury, under the laws of the State of California:

- The information provided on this Certificate of Installation is true and correct.
- I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
- The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations, and the installation conforms to the requirements given on the plans and specifications approved by the enforcement agency.
- I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
- I will ensure that a registered copy of this Certificate of Installation shall be posted, or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Builder/Installer Name: _____

Responsible Builder/Installer Signature: _____

Company Name: (Installing Subcontractor or General Contractor or Builder/Owner) _____

Position With Company (Title): _____

Address: _____

CSLB License: _____

City/State/Zip: _____

Phone: _____

Date Signed: _____

Before installation of fenestration, the installer shall verify the fenestration product matches either the CF1R- NCB, or CF1R-ADD, or CF1R-ALT, or CF1R-PRF certificate form. If the efficiencies are worse (less efficient), then the windows cannot be installed until proof of compliance is shown with an updated certificate form, or computer energy compliance run, documenting the less efficient windows. If the installed fenestration is better (more efficient) than the documentation shows, no updated documentation is required and installation is allowed.

A. FENESTRATION/GLAZING

1. **Tag/ID:** The labeling format used in the plans- ensure each unique type is used consistently throughout the plan set (elevations, finish schedules, etc.) to identify each matching fenestration product, such as: Window-1, Skylight-1 etc. It should also be consistently used on the other forms in the same compliance documentation.
2. **Manufacturer/Brand:** Provide the manufacturer and brand name which identifies the fenestration product being installed.
3. **Fenestration Area (ft²):** Indicate the total installed surface area (ft²) of the fenestration.
4. **Orientation:** Indicate the orientation of the same like fenestration. Use different lines if the orientation of the same fenestration varies. Enter N, S, E, or W.
5. **Chromogenic:** Is the glazing product chromogenic. Yes/No
6. **Number of Like Products:** Enter the number of the fenestration products of this type being installed. Use as many lines as necessary.
7. **U-factor:** Indicate the specified U-factor of the fenestration product(s) being installed. Do not mix different types on the same line.
8. **SHGC:** Indicate the specified SHGC that is being installed of the fenestration product(s). Do not mix different types on the same line.
9. **Source:** NFRC, CEC Default, NA6 Alternative. Enter the appropriate temporary label certificate identified as either NFRC, CEC Default or by using the information in NA6. All windows installed must have a label certificate which identifies the window's efficiencies. NFRC rated products have a temporary label that can be looked up in the NFRC product directory (<http://search.nfrc.org/search/searchDefault.aspx>).
10. **Fenestration Type:** Provide a description of the window type, for instance, the frame material, coatings, whether it is operable or fixed.
11. **Exterior Shading Devices:** If exterior shading devices are installed in conjunction with fenestration then indicate the type used (e.g. sunscreens, vertical roller or shades, retractable or drop arm or operable awnings, or roll down blinds or slats); or if an overhang is, or will be installed.
12. **Comments/Special Features:** Additional information for the field inspector.