



<b>CERTIFICATE OF COMPLIANCE</b>		CF-1R-ALT-01-E
<b>Prescriptive Residential Alterations</b>		(Page 1 of 2)
<b>Project Name:</b>		<b>Date Prepared:</b>

A. GENERAL INFORMATION			
01	Project Name:		
02	Date Prepared:		
03	Project Location:		04 Building Front Orientation (deg or cardinal):
05	CA City:	SAN RAMON	06 Number of Altered Dwelling Units:
07	Zip Code:		10 Total Conditioned Floor Area (ft2):
09	Climate Zone:	12	
11	Building Type		
13	Project Scope:		

D. FENESTRATION/GLAZING AREAS ALLOWED (Section 150.2(b)1)			
01	02	03	04
Alteration Type	Orientation	Maximum Allowed ft2	Comments

E. FENESTRATION/GLAZING PROPOSED AREAS AND EFFICIENCIES (Section 150.2(b)1)														
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
Tag/ ID	Fenestration Type	Frame Type	Dynamic Glazing	Orientation N, S, W, E, or Roof	Area Removed ft2	Area Added ft2	Net Added Area ft2	Maximum Allowed U-factor	U-factor	Source	SHGC	Source	Exterior Shading Device	Combined SHGC from CF1R-ENV-03

a	Net Added West-facing Fenestration Area		e	Net Added Fenestration Area (all orientations)	
b	Existing + Added West-facing Fenestration Area		f	Existing + Added Fenestration Area (all orientations)	
c	Maximum Allowed West-facing Fenestration Area		g	Maximum Allowed Fenestration Area (all orientations)	
d	Is West-facing Fenestration Area ≤ Maximum Allowed West-facing Fenestration Area		h	Is Existing + Added Fenestration Area ≤ Maximum Allowed Fenestration Area (all orientations)	

**CERTIFICATE OF COMPLIANCE**

CF-1R-ALT-01-E

**Prescriptive Residential Alterations**

(Page 2 of 2)

Project Name:

Date Prepared:

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

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

Documentation Author Name:

Documentation Author Signature:

Company:

Signature Date:

Address:

CEA/ HERS Certification Identification (if applicable):

City/State/Zip:

Phone:

**RESPONSIBLE PERSON'S DECLARATION STATEMENT**

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

1. The information provided on this Certificate of Compliance is true and correct.
2. I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
3. That the energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
4. The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
5. I will ensure that a registered copy of this Certificate of Compliance shall be 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 Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

Responsible Designer Name:

Responsible Designer Signature:

Company :

Date Signed:

Address:

License:

City/State/Zip:

Phone:

**For assistance or questions regarding the Energy Standards, contact the Energy Hotline at: 1-800-772-3300.**

Minimum requirements for prescriptive alteration compliance can be found in Building Energy Efficiency Standards Section 150.2(b)1.

Completing these forms will require that you have the Reference Appendices for the 2013 Building Energy Efficiency Standards (P400-2012-005). This document contains the Joint Appendices which are used to determine climate zone and to complete the section for opaque surfaces. When the term CF1R is used it means the CF1R-ALT-01. Worksheets are identified by their entire name and subsequently by only the worksheet number, such as WS-02.

Instructions for sections with column numbers and row numbers are given separately.

If any part of the alteration does not comply, prescriptive compliance fails, in which case the performance compliance approach must be used in an attempt to achieve compliance.

#### **A. GENERAL INFORMATION**

Project Name: Identifying information, such as owner's name.

Date: Date of document preparation.

Project Location: Legal street address of property or other applicable identifying information.

Compliance Method: Prescriptive.

CA City: Legal city/town of property.

Building Front Orientation: Building front expressed in degrees, where North = 0, East = 90, South = 180, and West = 270. Indicate cardinal if it is a subdivision or multi-family project built in multiple orientations. The standards (section 100.1) include the following additional details for determining orientation:

- Cardinal covers all orientations (for buildings that will be built in multiple orientations);
- North is oriented to within 45 degrees of true north, including 45 degrees east of north;
- East is oriented to within 45 degrees of true east, including 45 degrees south of east;

- South is oriented to within 45 degrees of true south, including 45 degrees west of south;
- West is oriented to within 45 degrees of true west, including 45 degrees south of west.

Zip Code: 5-digit zip code for the project location (used to determine climate zone).

Number of Dwelling Units: 1 for single-family, 1 or more for multifamily.

Climate zone: From Joint Appendix JA2.1.1.

Building Type: Single Family (includes duplex), or Multi Family (a building that shares common walls and common floors or ceilings).

Total Conditioned Floor Area: Enter the new conditioned floor area in ft<sup>2</sup>, as measured from the outside of exterior walls of the dwelling unit or building being altered.

Project Scope: Check all that apply – insulation, roof replacement, fenestration/glazing, heating system, cooling system, duct system, and/or water heating alteration.

#### **D. FENESTRATION/GLAZING AREAS ALLOWED**

The climate zone and size of the addition will affect the amount of fenestration (also known as glazing) allowed. If limited to 20%, this is calculated as Conditioned Floor Area x 0.20 = total ft<sup>2</sup> of fenestration allowed (20%). Fenestration areas are expressed in feet, not inches. When west-facing fenestration is limited (in climate zones 2, 4, and 6-16), it is limited to a maximum of 5%. Additions of 1,000 ft<sup>2</sup> or less have alternate requirements. For example, the limit may be 120 ft<sup>2</sup> of fenestration or 25%. While west-facing fenestration may be limited, if there is no west fenestration the upper limit remains at 120 ft<sup>2</sup> or 25% (or the values shown in columns 2 and 3).

The Alteration Type and Fenestration Type will affect how the standards apply and whether the fenestration area is limited. Percentages are determined as Conditioned Floor Area x 0.20 = total ft<sup>2</sup> of fenestration allowed (20%). Depending on the climate zone, If west-facing fenestration is limited, it is limited to a maximum of 5%. The overall total fenestration area is limited to 20%, not 25%. Fenestration areas are expressed in feet, not inches.

1. Alteration Type. Enter **Repair**, **Replace75**, **ReplaceALL**, **Add75**, **Add76**, **ReplaceSky**, **Add16Sky**, or **AddSky** as describe below:

**Repair:** A repair is when glass in an existing sash and frame is replaced or replacement of sashes in an existing frame. Repairs are not required to meet any requirements of the energy efficiency standards.

**Replace75:** When up to 75 ft<sup>2</sup> of fenestration is replaced, the replacement vertical fenestration must meet a maximum 0.40 U-factor and in climate zones 2, 4, 6-16 a maximum 0.35 SHGC.

**ReplaceAll:** When all fenestration (with an area of greater than 75 ft<sup>2</sup>) is replaced, the new fenestration product must have a maximum U-factor of 0.32 and in climate zones 2, 4, 6-16 a maximum SHGC of 0.25. This alteration does not trigger the area limits of Package A.

**Add75:** When adding fenestration up to 75 ft<sup>2</sup>, the selected fenestration product must have a maximum U-factor of 0.32 and in climate zones 2, 4, 6-16 a maximum SHGC of 0.25. This alteration does not trigger the area limits of Package A.

**Add76:** When more than 75 ft<sup>2</sup> is added to the existing fenestration, in addition to the above requirements, the maximum fenestration area of the dwelling unit cannot exceed 20% and the maximum West-facing fenestration area (in climate zones 2, 4, 6-16) cannot exceed 5%.

**ReplaceSky:** When an equal area of existing skylights is replaced, the replacement skylights must meet a maximum 0.55 U-factor and in climate zones 2, 4, 6-16 a maximum 0.30 SHGC.

**Add16Sky:** When up to 16 ft<sup>2</sup> of skylight area is added, the product selected must meet a maximum U-factor of 0.55 and in climate zones 2, 4, 6-16 a maximum 0.30 SHGC.

**AddSky:** When greater than 16 ft<sup>2</sup> of skylight area is added, the product selected must meet a maximum U-factor and SHGC of Table 150.1-A, which is a maximum 0.32 U-factor and in climate zones 2, 4, 6-16 a maximum 0.25 SHGC.

The remaining fields are auto completed based on alteration type, conditioned floor area, and climate zone.

2. Orientation: In climate zones with a west-facing limit (2, 4, 6-16), two values will be displayed, one for west and one for the other orientations (E, S, and W).
3. Maximum Allowed ft<sup>2</sup>: If West-facing fenestration is limited two rows will appear. West-facing fenestration area is limited to 5%, and the maximum total fenestration area is 20%. Depending on the type of fenestration and the alteration type, this field may show values such as 75 ft<sup>2</sup> or 16 ft<sup>2</sup>.  
The values in these fields will be entered into the lower Section E, rows c and g.

NOTE: West includes any vertical fenestration oriented to within 45 degrees of true west, including 45 degrees south of west. For skylights, west also includes any skylight area facing any direction with a pitch of less than 1:12

4. Comments: Note any special location or comment here.

#### **E. FENESTRATION/GLAZING PROPOSED AREAS AND EFFICIENCIES**

1. Tag/ID: A label (if any) from the plans, such as W1.
2. Fenestration Type: Window, glass door, skylight, glass block.
3. Frame type: Vinyl, wood, metal, metal thermal break, clad, fiberglass, or none.
4. Dynamic Glazing: Indicated if the fenestration has integrated shading device, chromogenic glazing or none for no dynamic Glazing. Chromogenic glazing shall be considered separately from other fenestration types.
5. Orientation (North, East, South, West). In climate zones where the West-facing glazing is limited, list west-facing individually. The definitions in the Energy Efficiency Standards include these specific details:
  - North is oriented to within 45 degrees of true north, including 45 degrees east of north;
  - East is oriented to within 45 degrees of true east, including 45 degrees south of east;
  - South is oriented to within 45 degrees of true south, including 45 degrees west of south;
  - West is oriented to within 45 degrees of true west, including 45 degrees north of west.

Skylights in a roof pitch greater than 1:12 can be included as facing the same orientation as that portion of the roof angle. If the skylight is in a roof with a pitch less than 1:12, the skylight is assumed to face west.

6. Area Removed ft<sup>2</sup>: The size of window(s) being replaced or removed (combine windows with the same characteristics).

NOTE: Doors with glazing are counted in one of two ways. A door with 50% or more glazing is counted as the entire door area. A door with less than 50% glazing can be counted as the entire door area or can be calculated as the actual glass area with a 2-inch (0.17 ft<sup>2</sup>) frame all around.

7. Area Added ft<sup>2</sup>: The size of new or replacement window(s), doors, skylights.
8. Net Added Area ft<sup>2</sup>: The difference between columns 4 and 5 (can be a negative number if reducing the area).
9. Maximum Allowed U-factor: This field will vary depending on the type of alteration specified in Section D.

NOTE: For up to 3 ft<sup>2</sup> of tubular skylights and up to 3 ft<sup>2</sup> of glazing in a door, this field and column 8 can be n/a. For up to 16 ft<sup>2</sup> of skylight, enter 0.55.

10. U-factor: Enter (a) the NFRC U-factor based on the proposed brand and type of fenestration using National Fenestration Rating Council ([www.nfrc.org](http://www.nfrc.org)) certified values, (b) the default value from Table 110.6-A, or (c) the weighted average U-factor calculated on form CF1R-ENV-02-E, Area Weighted Average Calculation Worksheet. For the exceptions, up to 3 ft<sup>2</sup> of tubular skylights and up to 3 ft<sup>2</sup> of glazing in a door enter N/A, and for up to 16 ft<sup>2</sup> of skylight, enter 0.55. If any products (other than the exceptions) have a higher U-factor than 0.32, first complete a ENV-02 to calculate a weighted average U-factor and attach it to the CF1R.

NOTE: Dynamic glazing is a glazing system that changes its performance U-factor and SHGC based on the physical environment. Dynamic glazing includes chromogenic glazing or integrated shading systems (this does not include internally or externally mounted shading devices). If using dynamic glazing, use the lowest tested U-factor and SHGC in Columns 8 and 11.

11. Source: NFRC, Default or WS-02. The source of the U-factor data for the fenestration product.
12. Maximum Allowed SHGC: This field will vary depending on the type of alteration specified in Section D for climate zones 2, 4 and 6-16. In climate zones 1, 3 and 5, where there is no maximum SHGC requirement, this value is n/a.
13. Source: NFRC, Default (from Table 110.6-B) or ENV-02. The source of the SHGC data for the fenestration product.
14. Exterior Shading Device: If exterior shading devices are used to meet the SHGC requirement, indicate the type of device (from Table S-1 of CF1R-ENV-03 Solar Heat Gain Coefficient Worksheet) and attach an ENV-03.

NOTES:

- (1) An exterior shading device is not used for products with an NFRC rated U-factor and SHGC based on a factory integrated shading device.
  - (2) If using an overhang for south-facing glazing, the glazing must be fully shaded at solar noon on August 21 and substantially exposed to direct sunlight at solar noon on December 21 (see Residential Manual, Section 3.5.5).
15. Combined SHGC From CF-1R-ENV-03: If exterior shading devices are combined with the SHGC value of the fenestration to meet the prescriptive SHGC requirements (as indicated by a value in column I. 11), indicate the SHGC calculated on form CF-1R-ENV-03 and attach the form for each window with an exterior shading device.

To determine compliance with allowable fenestration areas, complete rows a-h.

- a. Net Added West-facing Fenestration Area: If limited, enter the total amount of west-facing fenestration ONLY that will be added to the dwelling unit when alterations are complete.
- b. Existing + Added West-facing Fenestration Area: If more than 75 ft of fenestration is added, the dwelling unit cannot exceed 5% west-facing fenestration in climate zones 2, 4, and 6-16. Enter the area of West-facing fenestration ONLY that will be in the dwelling unit when alterations are complete.
- c. Maximum Allowed West-facing Fenestration Area: Conditioned Floor Area x 0.05 (for climate zones affected).
- d. Is West-facing Fenestration Area  $\leq$  Maximum Allowed West-facing Fenestration Area: Indicate Yes if west-facing fenestration area is less than or equal to the maximum area allowed, West-facing fenestration area is in compliance.
  - e. Net Added Fenestration Area (all orientations): This field is to show the net area of added fenestration for all orientations. When limited, the maximum is either up to 75 ft<sup>2</sup> of added fenestration or a 20% limit is placed on the dwelling unit when alterations are complete. The total includes all existing and new fenestration, including the area of fenestration with exceptions for U-factor and SHGC.
- f. Existing + Added Fenestration Area (all orientations): If more than 75 ft<sup>2</sup> of fenestration is added, the dwelling unit cannot exceed 20% fenestration. Enter the area of all fenestration existing and new in the dwelling unit when alterations are complete (including West facing).
- g. Maximum Allowed Total Fenestration Area (all orientations). Conditioned Floor Area x 0.20.
- h. Is Existing + Added Fenestration Area  $\leq$  Maximum Allowed Total Fenestration Area: Indicate Yes if the total fenestration area is less than or equal to the maximum area allowed, the fenestration area is in compliance.

**NOTE:** If any fenestration has a U-factor greater than the maximum, with the exception of the 3 allowances for tubular skylights, glass in door, and skylights with 0.55 or less, complete a ENV-02 and attach it to the CF1R. If adding fenestration in climate zones with a maximum SHGC requirement, and any fenestration has an SHGC greater than required (with the exception of the 3 allowances for tubular skylights, glass in door, and skylights with 0.55 or less), complete a ENV-02 and attach it to the CF1R.

## SIGNATURES

1. The person who prepared the CF1R will sign and complete the fields for their name, company (if applicable), address, phone number, certification information (if applicable), date and signature (may be electronic).
2. The person who is assuming responsibility for the project being built to comply with Title 24, Part 6, will complete the fields for their name, company (if applicable), address, phone number, license number (if applicable), date and signature (may be electronic).