PRESCRIPTIVE RESIDENTIAL ALTERATIONS THAT DO NOT REQUIRE ECC FIELD VERIFICATION

CALIFORNIA ENERGY COMMISSION

CEC-CF1R-ALT-05-E

CERTIFICATE OF COMPLIANCE

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

This compliance document is only applicable to simple alterations that do not require field verification for compliance. When field verification is required, a CF1R-ALT-01 shall first be registered with an ECC-Provider Data Registry.

Alterations to Space Conditioning Systems that are exempt from field verification requirements may use the CF1R-ALT-05 and CF2R- ALT-05 Compliance Documents. Possible exemptions from duct leakage testing include: less than 25 feet (ft) of ducts were added or replaced; or the existing duct system was insulated with asbestos; or the existing duct system was previously tested and passed by an ECC Rater. If space conditioning systems are altered and are not exempt from field verification, then a CF1R-ALT-02 must be completed and registered with a ECC Provider Data Registry.

Alterations that utilize closed cell Spray Polyurethane Foam (ccSPF) with a density of 1.5 to less than 2.5 pounds per cubic foot having an R-value greater than 5.8 per inch, or open cell Spray Polyurethane Foam (ocSPF) with a density of 0.4 to less than 1.5 pounds per cubic foot having an R-value of 3.6 per inch, shall complete and register a CF1R-ALT-01 with a ECC-Provider Data Registry.

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. All applicable Mandatory Measures shall be met. Temporary labels shall not be removed before verification by the building inspector.

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A. General Information

Field	Field Name	Data Entry
01	Project Name	
02	Date Prepared	
03	Project Location	
04	Building Front Orientation (deg or cardinal)	
05	CA City	
06	Number of Altered Dwelling Units	
07	Zip Code	
08	Fuel Type	
09	Climate Zone	
10	Total Conditioned Floor Area (ft^2)	
11	Building Type	Single Family
12	Slab Area (ft^2)	
13	Project Scope	Select as many as are applicable from list: ☐ Insulation (tables B, C & D) ☐ Roof Replacement >50% (table E & B) ☐ Space Heating System (Table J) ☐ Space Cooling System (Table J) ☐ Space Conditioning Duct System (Table J) ☐ Water Heating (Table K) ☐ Adding Fenestration/Glazing (Tables F & G) ☐ Adding Fenestration/Glazing ≤16 ft2 Skylight (Tables F & G) ☐ Replacing Fenestration/Glazing (Tables F and H) ☐ Replacing Fenestration/Glazing ≤ 75 ft2 Windows (Tables F & H) ☐ Replacing Fenestration/Glazing Skylight (Tables F & H) ☐ Opaque Exterior Doors (Table I)

Note: See the user instructions.

B. Opaque Surface Details - Framed (Section 150.2(b)1)

☐ This section does not apply to this project

Note:
Where insulation is installed above the roofing membrane, or above the layer used to seal the roof from water penetration, the insulation shall have a maximum water absorption of 0.3 percent by volume when tested according to American Society for Testing and Materials (ASTM) Standard C272.

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Tag/ID			
02	Assembly Type			
03	Frame Type			
04	Frame Depth (inches)			
05	Frame Spacing (inches)			
06a	**Proposed** Cavity R-value			
06b	**Proposed** Continuous Insulation R-value			
07	**Proposed** U-Factor			
08	**Required** U-Factor from Table 150.1-A			
09	Comments			

Note: See the user instructions.

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C. Opaque Surface Details – Nonframed

☐ This section does not apply to this project

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Tag/ID			
02	Assembly Type			
03	Assembly Materials			
04	Thickness (inches)			
05	**Proposed** Core Insulation R-value			
06a	**Proposed** Cavity R-value			
06b	**Proposed** Continuous Insulation R-value			
07	**Proposed** U-Factor			
08	**Required** U-Factor or R-Value			
09	Comments			

Note: See the user instructions.

D. Opaque Surface Details – Masonry/Mass Walls

☐ This section does not apply to this project

Note:
When insulation is added to the outside of a mass wall and/or when the inside is furred and insulated, the performance data may be adjusted using Equation 4-4 in the Reference Appendices, Joint Appendix, JA4.

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Tag/ID			
02	Above or Below Grade?			
03	**Proposed** Masonry/Mass Wall Type			
04	**Proposed** Mass Thickness (inches)			
05	**Proposed** Exterior Insulation - R-Value			
06	**Proposed** Exterior Insulation - U-Factor			
07	**Proposed** Interior Insulation - R-value			
08	**Proposed** Interior Insulation - U-Factor			
09	**Required** Exterior Insulation - R-value			
10	**Required** Exterior Insulation - U-Factor			
11	**Required** Interior Insulation - R-Value			
12	**Required** Interior Insulation - U-Factor			

Note: See the user instructions.

E. Roof Replacement (Section 150.2(b)1I)

☐ This section does not apply to this project

Notes:

- Roof area covered by building integrated photovoltaic (PV) panels and solar thermal panels are exempt from the above Cool Roof requirements.
- Liquid field applied coatings must comply with installation criteria from Section 110.8(i)4.

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Tag/ID			
02	Method of Compliance			
03	Roof Pitch			
04	Exception	☐ N/A	☐ N/A	☐ N/A
05	CRRC Product ID Number	☐ N/A	☐ N/A	☐ N/A
06	Product Type	☐ N/A	☐ N/A	☐ N/A
07	R-value Deck Insulation	☐ N/A	☐ N/A	☐ N/A
08	**Proposed** Initial Solar Reflectance	☐ N/A	☐ N/A	☐ N/A
09	**Proposed** Aged Solar Reflectance	☐ N/A	☐ N/A	☐ N/A
10	**Proposed** Thermal Emittance	☐ N/A	☐ N/A	☐ N/A
11	**Proposed** SRI (Optional)	☐ N/A	☐ N/A	☐ N/A
12	**Minimum Required** Aged Solar Reflectance	☐ N/A	☐ N/A	☐ N/A
13	**Minimum Required** Thermal Emittance	☐ N/A	☐ N/A	☐ N/A
14	**Minimum Required** SRI (Optional)	☐ N/A	☐ N/A	☐ N/A

Note: See the user instructions.

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F. Fenestration/Glazing Allowed Areas and Efficiencies (Section 150.2(b)1A)

☐ This section does not apply to this project

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Alteration Type			
02	Maximum Allowed Fenestration Area for All Orientations (ft^2)	☐ N/A	☐ N/A	☐ N/A
03	Maximum Allowed West-Facing Fenestration Area Only (ft^2)	☐ N/A	☐ N/A	☐ N/A
04a	Existing Fenestration Area for All Orientations (ft^2)			
04b	Existing West-Facing Fenestration Area (ft^2)			
05a	Maximum Allowed U-factor (Windows)			
05b	Maximum Allowed U-factor (Skylights)			
06a	Maximum Allowed SHGC (Windows)	☐ N/A	☐ N/A	☐ N/A
06b	Maximum Allowed SHGC (Skylights)	☐ N/A	☐ N/A	☐ N/A
07	Comments:			

Note: See the user instructions.

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G. Fenestration Proposed Areas and Efficiencies – Add (Section 150.2(b)1A)

☐ This section does not apply to this project

Note: Doors with greater than or equal to 25 percent glazed area are considered glazed doors and are treated as fenestration products.

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Tag/ID			
02	Fenestration Type			
03	Frame Type			
04	Dynamic Glazing			
05	Orientation N, S, W, E			
06	Number of Panes			
07	Proposed Fenestration Area (ft^2)	☐ N/A	☐ N/A	☐ N/A
08	Proposed West Facing Fenestration Area (ft^2)	☐ N/A	☐ N/A	☐ N/A
09	Proposed U-factor			
10	Proposed U-factor Source			
11	Proposed SHGC	☐ N/A	☐ N/A	☐ N/A
12	Proposed SHGC Source			
13	Exterior Shading Device			
14	Combined SHGC from CF1R-ENV-03	☐ N/A	☐ N/A	☐ N/A

Note: See the user instructions

Table G - Continue

Field	Field Name	Data Entry	
15	Total: Existing + Proposed Fenestration Area		☐ N/A
16	Maximum Allowed Fenestration Area		
17	**Compliance Statement:**		☐ N/A
18	Total: Existing + Proposed West-Facing Fenestration Area		☐ N/A
19	Maximum Allowed West-Facing Fenestration Area		
20	**Compliance Statement:**		☐ N/A
21	Proposed Fenestration U-factor (Windows)		☐ N/A
22	Required Fenestration U-factor (Windows)		
23	**Compliance Statement:**		☐ N/A
24	Proposed Fenestration SHGC (Windows)		☐ N/A
25	Required Fenestration SHGC (Windows)		
26	**Compliance Statement:**		☐ N/A
27	Proposed Fenestration U-factor (Skylights)		☐ N/A
28	Required Fenestration U-factor (Skylights)		
29	**Compliance Statement:**		☐ N/A
30	Proposed Fenestration SHGC (Skylights)		☐ N/A
31	Required Fenestration SHGC (Skylights)		
32	**Compliance Statement:**		☐ N/A

Note: See the user instructions

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H. Fenestration/Glazing Proposed Areas and Efficiencies – Replace (Section 150.2(b)1B)

☐ This section does not apply to this project

Note: Doors with greater than or equal to 25 percent glazed area are considered glazed doors and are treated as fenestration products.

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Tag/ID			
02	Fenestration Type			
03	Frame Type			
04	Dynamic Glazing			
05	Orientation N, S, W, E			
06	Area Removed (ft^2)			
07	Area Added (ft^2)			
08	Net Added Area (ft^2)			
09	Proposed U-factor			
10	Proposed U-factor Source			
11	Proposed SHGC	☐ N/A	☐ N/A	☐ N/A
12	Proposed SHGC Source			
13	Exterior Shading Device			
14	Combined SHGC from CF1R-ENV-03	☐ N/A	☐ N/A	☐ N/A

Note: See the user instructions

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Table H - Continue

Field	Field Name	Data Entry
15	Net Added West-facing Fenestration Area	
16	Is Net Added Fenestration Area ≤ for west-facing fenestration?	☐ Yes ☐ No
17	Net Added Fenestration Area (all orientations)	
18	Is Net Added Fenestration Area ≤ 0 for all orientations?	☐ Yes ☐ No
19	Proposed Fenestration U-factor (Windows)	☐ N/A
20	Required Fenestration U-factor (Windows)	
21	**Compliance Statement:**	☐ N/A
22	Proposed Fenestration SHGC (Windows)	☐ N/A
23	Required Fenestration SHGC (Windows)	☐ N/A
24	**Compliance Statement:**	☐ N/A
25	Proposed Fenestration U-factor (Skylights)	☐ N/A
26	Required Fenestration U-factor (Skylights)	
27	**Compliance Statement:**	☐ N/A
28	Proposed Fenestration SHGC (Skylights)	☐ N/A
29	Required Fenestration SHGC (Skylights)	
30	**Compliance Statement:**	☐ N/A

Note: See the user instructions

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I. Opaque Swinging Doors to Exterior (Section 150.1(c)5)

☐ This section does not apply to this project

Notes:

- Any door with 25 percent or more glass is counted as a fenestration product in Tables F, G and H.
- Do not include fire-rated doors between garage or unconditioned space and conditioned space.
- If using weighted average to achieve required maximum U-factor, attach CF1R-ENV-02-E.

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Tag/ID			
02	Area			
03	Proposed U-factor			
04	Proposed U-factor Source			
05	Required Maximum U-factor			
06	Weighted Average (Yes/No)	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
07	Comments			

Note: See the user instructions

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J. Space Conditioning (SC) Systems – Heating/Cooling (Section 150.2(b))

☐ This section does not apply to this project

Alterations to space conditioning systems shall be exempt from field verification and diagnostic testing requirements as prerequisite for use of the CF1R-ALT-05 and CF2R-ALT-05 compliance documents. If new space conditioning systems are installed or existing systems are altered and are not exempt from field verification and diagnostic testing, then a CF1R-ALT-02 shall be completed and registered with an ECC Provider Data Registry. In each row below for each space conditioning system, select the applicable exemption from the dropdown list in the Field Verification Compliance:

A. Space conditioning system was not altered;
B. Less than 25 ft of ducts were added or replaced;
C. (exempt from duct leakage testing) if: the existing duct system was insulated with asbestos;
D. (exempt from duct leakage testing) if: the existing duct system was previously tested and passed by an ECC Rater.

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	SC System Identification or Name			
02	SC System Location or Area Served			
03	Exemption from Field Verification			

Note: See the user instructions.

K. Water Heating Systems (Section 150.2(b)1H)

☐ This section does not apply to this project

List water heaters and boilers for both domestic hot water (DHW) heaters and hydronic space heating.
Options:

1. Gas or propane water heating system; or
2. A single heat pump water heater. The storage tank shall not be located outdoors and shall be placed on an incompressible, rigid insulated surface with a minimum thermal resistance of R-10. The water heater shall be installed with a communication interface that meets either the requirements of Section 110.12(a) or has an ANSI/CTA-2045-B communication port; or
3. A single heat pump water heater that meets the requirements of NEEA Advanced Water Heater Specification Tier 3 or higher; or
4. If no natural gas is connected to the existing water heater location, a consumer electric water heater (Heat Pump Water Heater or Electric Resistance)

Field	Field Name	Data Entry
01	Is natural gas connected to the existing water heater?	☐ Yes ☐ No

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
02	Water Heating System ID or Name			
03	System Option (from §150.2(b)1Hiii)			
04	Water Heater Type			
05	Fuel Type			
06	Tank Volume	☐ N/A	☐ N/A	☐ N/A

Note: See the user instructions

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Documentation Author's Declaration Statement 1. I certify that this Certificate of Compliance documentation is accurate and complete.	Author Name Author Signature Date Signed Company Name CEA/AEA/ECC Certification ID Address 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. 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 understand that a completed signed copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and shall be made available to the enforcement agency for all applicable inspections. I will take the necessary steps to fulfill this requirement. 6. I understand that a completed signed copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy. I will take the necessary steps to fulfill this requirement.	Responsible Name Responsible Signature Date Signed Company Name License Number Address City/State/Zip Phone

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

CF1R-ALT-05-E User Instructions

NOTE: If more space is needed, print a duplicate page and fill in.

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 2025 Building Energy Efficiency Standards. 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-05. Worksheets are identified by their entire name and subsequently by only the worksheet number, such as ENV-02.
Instructions for sections with column numbers and row letters 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

1. Project Name: Identifying information, such as owner's name.
2. Date Prepared: Date of document preparation.
3. Project Location: Legal street address of property or other applicable identifying information.
4. Building Front Orientation: Building front orientation expressed in degrees, where North = 0, East = 90, South = 180, and West = 270. Indicate cardinal if it is a subdivision 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 north of west.
5. CA City: Legal city/town of property.
6. Number of Altered Dwelling Units: 1 for single-family
7. Zip Code: 5-digit zip code for the project location (used to determine climate zone).
8. Fuel Type is limited to the one of the following: Natural Gas, Propane, or Electricity.
9. Climate Zone: From Reference Appendices, Joint Appendix, JA2.1.1.
10. Total Conditioned Floor Area: Enter the new conditioned floor area in square feet (ft^2), as measured from the outside of exterior walls of the dwelling unit or building being altered.
11. Building Type: Static value is "Single Family".
12. Slab Area: Area of the first floor slab (if any) in square feet (ft^2).
13. Project Scope: Insulation, Roof Replacement, Fenestration/Glazing, Heating System, Cooling System, Duct System, and/or Water Heating System alteration.

B. Opaque Surface Details (Section 150.2(b)1)

1. Tag/ID: A label (if any) from the plans, such as A1.4 or wall.
2. Assembly Type: Roof, Ceiling, Wall, Floor or Attic.
3. Frame Type: Wood or Metal.
4. Frame Depth: Nominal dimensions of framing material in inches such as 2x4, 2x6, 2x8, 2x10.
5. Frame Spacing: 16,24, or 48 inches on center.

6a. Proposed Cavity R-value: Insulation installed between framing.

6b. Proposed Continuous Insulation R-value: R-value of rigid or continuous insulation (not interrupted by framing). See Table 4.3.4. of Reference Appendices, Joint Appendix, for metal frame construction.

NOTE: Section 110.8(d) specifies that if adding insulation to an existing attic, the resulting attic insulation must total R-22. However, the amount of insulation required is limited to the amount of room available for insulation without conflicting with Building Code Section 1203.2.

7. Proposed U-factor: The U-factor for the entire assembly.
8. Required U-factor: From the requirements in Sections 110.8 and 150.0.
9. Comments: Any notes regarding location, unique conditions, or attachments.

C. Opaque Surface Details – Non-framed

1. Tag/ID: A label (if any) from the plans, such as A1.4 or wall.
2. Assembly Type: Roof or Wall.
3. Assembly Material: SIP OSB, SIP I-Joist, SIP Single 2x, SIP Double 2x, see JA4 for guidance.
4. Thickness: Thickness in inches.
5. Proposed Core Insulation R-value: Insulation installed within the materials or on the inside. See Reference Appendices, Joint Appendix, JA4 for guidance.
6. Proposed Continuous Insulation R-value: Insulation installed on the exterior. See Reference Appendices, Joint Appendix, JA4 for guidance.
7. Proposed U-factor: Assembly U-factor from Reference Appendices, Joint Appendix, JA4 or CF1R-ENV-02. Must be less than or equal to Column 8.
8. Required U-factor from Table 150.1-A: Based on assembly type and climate zone.
9. Comments: Any notes regarding location, unique conditions, or attachments.

D. Opaque Surface Details – Masonry/Mass Walls

1. Tag/ID: A label (if any) from the plans, for example, A1.4 or wall.
2. Above or Below Grade?: Indicate whether the mass wall is installed above grade o below grade.
3. Masonry/Mass Wall Type: Clay Brick, Clay Hollow Unit, Concrete Masonry Unit (CMU) Light Weight, Concrete Masonry Unit (CMU) Medium Weight, Concrete Masonry Unit (CMU) Normal Weight, Concrete, Insulating Concrete Form (ICF). See Reference Appendices, Joint Appendix, JA4 for guidance.
4. Masonry/Mass Wall Thickness: Thickness (in inches) of mass.

5-6. Proposed Exterior Insulation R-value or U-factor: Enter the R-value or U-factor of proposed insulation on the outside surface of the mass wall. See Reference Appendices, Joint Appendix, JA4 for guidance. Use the same descriptor (R-value or U-factor) throughout Table D.

7-8. Proposed Interior Insulation R-value or U-factor: Enter the R-value or U-factor of proposed insulation on the inside surface of the mass wall. See Reference Appendices, Joint Appendix, JA4 for guidance. Use the same descriptor (R-value or U-factor) throughout Table D.

9-10. Required Exterior Insulation R-value or U-factor: The required R-value or U-factor (whichever descriptor was selected in Column 5 or 6) for exterior insulation will be completed based on the Table 150.1-A requirements for the wall type.

11-12. Required Interior Insulation R-value or U-factor: The required R-value or U-factor (whichever descriptor was selected in Column 7 or 8) for interior insulation will be completed based on the Table 150.1-A requirements for the wall type.

E. Roof Replacement (Section 150.2(b)1I)

When 50% or more of the roof is being replaced the roofing requirements are triggered. Any areas of roof covered by building integrated photovoltaic panels and solar thermal panels are exempt, but the area of roof not covered by photovoltaic panels would still need to meet any applicable cool roof requirements. Additionally, there are many alternatives/exceptions to when a cool roof is required.

When the roof is steep-sloped (pitch greater than or equal to 2:12) the roof requirements include a cool roof in climate zones 4 and 8-15. The minimum requirement is 0.20 Aged Solar Reflectance, 0.75 Thermal Emittance, or a minimum SRI of 16.

1. Tag/ID: A label, if any, from the plans, for example R-1.
2. Method of Compliance is limited to the one of the following:
   Not in an applicable climate zone, Aged Solar Reflectance and Thermal Emittance, Initial Solar Reflectance and Thermal Emittance, SRI or Exception.
3. Roof Pitch is limited to the one of the following: >=2:12 or <2:12
   Expressed as 2:12, for example, which means the roof rises 2 foot within a span of 12 feet. When roofs have multiple pitches the requirements are based on the pitch of 50 percent or more of the roof.
4. Exception: if E02 = Exception and E03 is >= 2:12 and A09 = 4, or 8-15, then exception is limited to one of the following:
   a. Mass roof 25 lbs/ft2 or greater,
   b. Roof area with PV panels or solar thermal panels,
   c. Roof has U-factor of ≤ R-38 insulation,
   d. Roof has a radiant barrier not installed above spaced sheathing meeting 150.1(c)2,
   e. R-2 insulation above the roof deck;

   if A09 = 2, 4, 9, 10, 12 or 14, then select:
   f. No ducts are installed in the attic;

   Else if E02 equals Exception and E03 is < 2:12 and A09 = 4, or 6-15, then choices are:
   g. Mass roof ≥ 25 lbs/ft2,
   h. Roof deck installation, or
   i. Roof area with PV panels or solar thermal panels;

   Else report N/A

   Note: If one of the exceptions above has been selected then the rest of Section C. is not required.
5. CRRC Product ID Number: If E03 ≥ to 2:12 and E02 = exception, then report N/A;
   Else if E03 < 2:12, E02 = exception and E04 ≠ roof deck installation, then report N/A;
   Else input value from the Cool Roof Rating Council's directory. Products are listed by manufacturer, brand, type of installation, roofing material, and color, as well as product performance.

6. Product type is limited to one of the following:
   Asphalt Shingles, Built-up Roofing, Concrete/Clay Roof Tiles, Slate, Factory Applied Coating, Field Applied Coating, Metal Roof, Modified Bitumin Sheet, Roof Pavers, Single Ply Thermoplastic, Single Ply Thermoset, Metal Shakes Shingles, Fluid Applied Membrane, Polymer Composite Steep Slope, Spray Polyurethane Foam, Stone Aggregate Ballast. See Cool Roof Rating Council's directory
7. R-value Deck Insulation: If E03 < 2:12 and E04 = insulation above the roof deck, select from one of the R-value list(R-2, R-4, R-6, R-8, R-12, R-16, R-20, R-24); Else report N/A .
8. Proposed Initial Solar Reflectance: if E02 = Initial Solar Reflectance and Thermal Emittance, then input value from the Cool Roof Rating Council's directory;
   Elseif E02 equals Exception, E03 < 2:12 and E04 = roof deck installation, then input value from the CRRC Directory; Else report N/A
   Elseif E02 equals Exception, E03 < 2:12 and E04 = roof deck installation, then input value from the Cool Roof Rating Council's directory; Else report N/A
9. Proposed Aged Solar Reflectance:
   If E02 = 'Not in an applicable climate zone' or 'SRI', then value = N/A;
   Else if E02 = exception, E03 < 2:12 and E04 ≠ roof deck installation, then value = N/A;
   Elseif E02 = Initial Solar Reflectance and Thermal Emittance, then input calculated value using equation from 110.8(i)2; Else input value from Roof Rating Council's directory.

   If the aged value is not available, calculate the Aged Solar Reflectance using the Solar Reflectance Index (SRI) Calculator located on the California Energy Commission website or the aging equation $\rho_{aged}=[0.2+\beta[\rho_{initial}-0.2]$, where $\rho_{initial}$ = the initial solar reflectance and soiling resistance β is listed by product type below.

VALUES OF SOILING RESISTANCE β BY PRODUCT TYPE

Product Type	CRRC Product Category	β
Field-Applied Coating	Field-Applied Coating	0.65
Other	Not A Field-Applied Coating	0.70

10. Proposed Thermal Emittance: If E02 = 'Not in an applicable climate zone', then report N/A;
    If E02 = exception, E03 < 2:12 and E04 ≠ roof deck installation, then report N/A;
    Else input value from Roof Rating Council's directory.
    If using a calculated Solar Reflectance Index (SRI) place the Thermal Emittance used to calculate SRI.
11. Proposed Solar Reflectance Index (SRI): It is optional to meet the SRI but if chosen to do so, use the Solar Reflectance Index (SRI) Calculator found on the California Energy Commission website, SRI worksheet.
12. Minimum Required Aged Solar Reflectance is limited to one of the following based on climate zone and roof slope.
    If E02 = exception, E03 < 2:12, E04= roof deck insulation and E07 = R-2, then value = 0.60;
    Else if E02 = exception, E03 < 2:12, E04 = roof deck insulation and E07 = R-4, then value = 0.55;
    Else if E02 = exception, E03 < 2:12, E04 = roof deck insulation and E07 = R-6, then value = 0.50;
    Else if E02 = exception, E03 < 2:12, E04 = roof deck insulation and E07 = R-8, then value = 0.45;
    Else if E02 = exception, E03 < 2:12, E04 = roof deck insulation and E07 = R-12, then value = 0.40;
    Else if E02 = exception, E03 < 2:12, E04 = roof deck insulation and E07 = R-16, then value = 0.35;

Else if E02 = exception, E03 < 2:12, E04 = roof deck insulation and E07 = R-20 then value = 0.30;
Else if E02 = exception, E03 < 2:12, E04 = roof deck insulation and E07 = R-24, then value = 0.25;
Else if E02 = Aged Solar Reflectance and Thermal Emittance, E03 < 2:12, A09 = 13 or 15, then value = 0.63;
Else if E02 = Initial Solar Reflectance and Thermal Emittance, E03 < 2:12, A09 = 13 or 15, then value = 0.63;
Else if E02 = Aged Solar Reflectance and Thermal Emittance, E03 ≥ 2:12, A09 = 10 – 15, then value = 0.20;
Else if E02 = Initial Solar Reflectance and Thermal Emittance, E03 ≥ 2:12, A09 = 10 – 15, then value = 0.20;
Else report N/A.

13. Minimum Required Thermal Emittance: Based on climate zone and roof slope. If E02 = exception and E04 ≠ roof deck installation, then report N/A;
    Else if E02 = 'Not in an applicable climate zone' or 'SRI', then report N/A; Else report 0.75.
14. Minimum Required SRI: Based on climate zone and roof slope. If E02 equals SRI, E03= < 2:12 and A09 = 13 or 15, then value = 75;
    Else if E02 = SRI, E03 ≥ to 2:12 and A09 = 10 -15, then value = 16; Else report N/A

Note: If the cool roofing requirements will be met by a liquid field applied coating, Section 110.8(i)4 requires the coating be applied across the entire roof surface and meet the dry mil thickness or coverage recommended by the manufacturer.

F. Fenestration/Glazing Allowed Areas and Efficiencies (Section 150.2(b)1)

The Alteration and Fenestration Type will affect how the standards apply and whether the fenestration area is limited. Percentages are determined as Conditioned Floor Area (CFA) x 0.20 = total square footage (ft^2) of fenestration allowed (20 percent). Depending on the climate zone, if west-facing fenestration is limited (in climate zones 2, 4, 6-15), it is limited to a maximum of 5 percent. The overall total fenestration area is limited to 20 percent, not 25 percent. Fenestration areas are expressed in square feet, not square inches.

1. Alteration Type is limited to one of the following: 'Adding fenestration/glazing', 'Replacing fenestration/glazing', ' Replacing fenestration/glazing <= 75 ft^2 window', 'Adding fenestration/glazing <= 16 ft^2 skylight' and or 'Replacing fenestration/glazing skylight'.
2. Maximum Allowed Fenestration Area for All Orientations (ft^2): Calculated value: if F01 contains Add Fenestration/Glazing then value = (A10 x 0.20); else report N/A.
   The maximum allowed fenestration area is 20 percent. Depending on the type of fenestration and the alteration type.
3. Maximum Allowed West-Facing Fenestration Area Only: Calculated value: if F01 contains Add Fenestration/Glazing then value = (A10 x 0.05); else report N/A.
   The Maximum Allowed West-Facing Fenestration Area is 5 percent of the conditioned floor area (used in climate zones 2, 4, and 6-15).
   Note: (1) If adding fenestration/glazing less than or equal to 16 ft^2 skylight, enter NA
   (2) 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. Existing Fenestration Area for All Orientations: Enter the area, in square feet, of the existing fenestration/glazing.

Existing West-Facing Fenestration Area: Enter the area, in square feet (ft^2), of the existing west-facing fenestration/glazing. If project has no existing west-facing fenestration then enter "0".

5. Maximum Allowed U-factor: Maximum U-factor from Table 150.1-A, Package A.
   Note:
   5a. If F01 = Replace Fenestration/Glazing ≤ 75 ft2 Windows then the value = 0.40;
   If A09 = 1 through 5, 11 through 14 and 16 then value = 0.27; Else If A09 = 6 through 10 and 15 then value = 0.30
   5b. If meeting Exception 2 to Section 150.2(b)1B (replacing skylights), enter 0.40.
   If A09 = 1 through 5, 11 through 14 and 16 then value = 0.27; Else If A09 = 6 through 10 and 15 then value = 0.30
6. Maximum Allowed SHGC: Maximum solar heat gain coefficient (SHGC) from Table 150.1-A.
   Note:
   6a. If A09 = 1, 3, 5 or 16, then report N/A;
   If F01 = Replace Fenestration/Glazing ≤ 75 ft2 Windows, then value = 0.35;
   Else value = 0.23.
   6b. If A09 = 1, 3, 5 or 16, then report N/A;
   If F01 = Add Fenestration/Glazing ≤ 16ft2 skylight, or Replace Fenestration/Glazing Skylight = 0.30; Else value = 0.23
7. Comments: Note any special location or comment here.

G. Fenestration/Glazing Proposed Areas and Efficiencies - Add (Section 150.2(b)1A)

1. Tag/ID: A label (if any) from the plans, such as W1.
2. Fenestration Type is limited to one of the following: Fixed Window, Operable Window, or Skylight.
   NOTE: Doors with glazing are counted in one of two ways. A door with 25 percent or more glazing is considered a glazed door and is counted as the entire door area. A door with less than 25 percent 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^2) frame all around.
3. Frame type is limited to one of the following: Metal, metal thermal break, or nonmetal.
4. Dynamic Glazing is limited to one of the following: 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): The definitions in the Energy 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.

   NOTE: 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. Number of Panes: Indicate the number of panes for each Tag/ID; is limited to one of the following: Single pan, Double pan, or Triple pane window.
7. Proposed Fenestration Area (ft^2): Indicate the area in square feet (ft^2) of each exterior fenestration type, excluding west-facing fenestration. If G05 = North, East or South, then enter the defined

number in this field; else if G05 = West then report N/A.

8. Proposed West Facing Fenestration Area (ft^2): In climate zones 2, 4, 6-15, indicate the area in square feet (ft^2) of each exterior west-facing fenestration type separately. If G05 equals West, then enter the defined number in this field; else if G05 equals North, East, or South then report N/A.
9. Proposed U-factor: Enter (a) the National Fenestration Rating Council (NFRC) U-factor based on the proposed brand and type of fenestration using NFRC certified values, (b) the default value from Table 110.6-A or Equation NA6-1, or (c) the weighted average U-factor calculated on form CF1R-ENV-02-E.

   For the exceptions, up to 3 square feet (ft^2) of tubular skylights and up to 3 ft^2 of glazing in a door enter N/A, and for up to 16 ft^2 of skylight, enter 0.40. If any products (other than the exceptions) have a higher U-factor than required by Package A, first complete a form CF1R-ENV-02 to calculate the area-weighted average U-factor and attach it to this 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 solar heat gain coefficient (SHGC) in Columns 9 and 11.
10. Proposed U-factor Source is limited to one of the following: National Fenestration Rating Council (NFRC), Table 110.6-A, Equations NA6-1 and NA6-2, or Area-Weighted Average Worksheet (ENV-02). The source of the U-factor data for the fenestration product.
11. Proposed SHGC: If A09-climate zones 2, 4, 6-15 enter the solar heat gain coefficient (SHGC) from (a) National Fenestration Rating Council (NFRC), or (b) default value from Table 110.6-B or Equation NA6-2, or (c) the weighted average SHGC calculated on form CF1R-ENV-02. If A09 = 1, 3, 5 or 16, then result equals NA.

    For the exceptions – up to 3 square feet (ft^2) of tubular skylights and up to 3ft^2 of glazing in a door, enter N/A. If any products (other than the exceptions) have a higher SHGC than required by Table 150.1-A, first complete a form CF1R-ENV-02 to calculate the area-weighted average SHGC and attach it to this CF1R.
12. Proposed SHGC Source is limited to one of the following: National Fenestration Rating Council (NFRC), Table 110.6-A, Equations NA6-1 and NA6-2, or Area-Weighted Average Worksheet (ENV-02). The source of the U-factor data for the fenestration product.
13. 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.
    Input is limited to one of the following: Drop Arm Awnings, Louvered Sun Screen, Low Sun Angle Louvered Sun Screen, None, Operable Awnings, South-facing Overhang, Retractable Awnings, Roll Down Blinds Or Slats, Standard Bug Screen, Sun Screen, Vertical Roller Or Shades
    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 Compliance Manual, Section 3.3.6.3).

14. Combined SHGC from CF1R-ENV-03: If A09 = 1, 3, 5 or 16, then result equals NA;
    Else If G13 equal to None, or G04 contains Chromogenic glazing, then report N/A;
    Else report value from CF1R-ENV-03 and attach the form for each window with an exterior shading device.

To determine compliance with allowable fenestrations areas and efficiencies, complete rows 15-32.

15. Total Proposed Fenestration Area: Enter the sum of the existing (F04a) and proposed fenestration areas for all orientations (G07 + G08). For project scopes: Add Fenestration/Glazing less than or equal to 16 ft^2, enter NA.
    Calculated value: if A13 ≠ Add Fenestration/Glazing then report N/A; Else [F04a + (sum of G07) + (sum of G08)]
16. Maximum Allowed Fenestration Area: Enter the maximum allowed fenestration area for all orientations, from F02.
17. Compliance Statement: If G15 = N/A then report N/A; If G15 is ≤ G16, or G16 = N/A, then report: "Design Complies with the Total Allowed Fenestration Area"
    Else report: Total Proposed Fenestration Area Exceeds Allowable, **Do Not Proceed**
    If No, the project fails prescriptive compliance – specified fenestration areas must be reduced, or compliance may be attempted using the performance approach.
18. Total Proposed West-Facing Fenestration Area: Calculated value: if A13 ≠ Add Fenestration/Glazing then report N/A; else [F04a + (sum of G08)]
19. Maximum Allowed West-Facing Fenestration Area: Enter the maximum allowed west-facing fenestration area only, from F03.
20. Compliance Statement: If G18 = N/A then value = N/A; If G18 is ≤ G19, or G19 = N/A, then report: Design Complies with the Total Allowed West-facing Fenestration Area;
    Else report: Total Proposed West-facing Fenestration Area Exceeds Allowable, **Do Not Proceed**
    If the project fails prescriptive compliance – specified west-facing fenestration areas must be reduced, or compliance may be attempted using the performance approach.
21. Proposed Fenestration U-factor (Windows): If G02 = fixed window or operable window and if all associated values listed in G09 are ≤ to 0.30 then enter the single largest value from list; If G02 ≠ fixed window or operable window then report N/A;
    Else enter the weighted average value from the CF1R-ENV-02
22. Required Fenestration U-factor (Windows): Enter the Maximum Allowed U-factor (F05a).
23. Compliance Statement: If G21 = N/A then value = N/A; If G21 is ≤ G22 then report: Design Complies with the Maximum Allowed Fenestration U-value;
    Else report: Fenestration U-value Exceeds Allowable, **Do Not Proceed**
    If the project fails prescriptive compliance – specified fenestration U-factor must be reduced, or compliance may be attempted using the performance approach.
24. Proposed Fenestration SHGC (Windows): If G02 = fixed window or operable window and if all associated values listed in G11 or G14 are ≤ to 0.23 then enter the single largest value from the two lists; Else If G11 or G14 e= NA, then report N/A; IF G02 ≠l fixed window or operable window then report N/A; Else enter the weighted average value from the CF1R-ENV-02
25. Required Fenestration SHGC (Windows): Enter the Maximum Allowed solar heat gain coefficient (SHGC) (F06a).
26. Is the Proposed Fenestration SHGC less than or equal to the Required Fenestration SHGC: Indicate Yes if the Proposed Fenestration SHGC is less than or equal to the Required Fenestration SHGC. If No, the

project fails prescriptive compliance – specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach. Or report N/A if G24 equals N/A.

27. Proposed Fenestration U-factor (Skylights): If necessary, report the area-weighted average U-factor from the completed CF1R-ENV-02. Otherwise, report the single largest associated value from G09.
28. Required Fenestration U-factor (Skylights): Enter the Maximum Allowed U-factor (F05b).
29. Compliance Statement: If G27 = N/A then value = N/A; If G27 is ≤ G28 then report: Design Complies with the Maximum Allowed Fenestration U-factor; Else report: Fenestration U-factor Exceeds Allowable, **Do Not Proceed**
    If the project fails prescriptive compliance – specified fenestration U-factor must be reduced, or compliance may be attempted using the performance approach.
30. Proposed Fenestration SHGC (Skylights): If G02 = skylight then enter the single largest associated value from columns G11 or G14; Else If G11 or G14 = NA, then report N/A; If G02 ≠ skylight then report N/A
31. Required Fenestration SHGC (Skylights): Enter the Maximum Allowed solar heat gain coefficient (SHGC) (F06b).
32. Compliance Statement: If G30 = N/A then value = NA; If G30 is ≤ G31 then report: Design Complies with the Maximum Allowed Fenestration SHGC;
    Else report: Fenestration SHGC Exceeds Allowable, **Do Not Proceed**.
    If the project fails prescriptive compliance – specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach.

H. Fenestration/Glazing Proposed Areas and Efficiencies – Replace (Section 150.2(b)1B)

1. Tag/ID: A label (if any) from the plans, such as W1.
2. Fenestration Type is limited to one of the following: Fixed Window, Operable Window, or Skylight.
   NOTE: Doors with glazing are counted in one of two ways. A door with 25 percent or more glazing is considered a glazed door and is counted as the entire door area. A door with less than 25 percent glazing can be counted as the entire door area or can be calculated as the actual glass area with a 2-inch (0.17 ft2) frame all around.
3. Frame Type is limited to one of the following: Metal, metal thermal break, or nonmetal.
4. Dynamic Glazing is limited to one of the following: Integrated shading device, chromogenic glazing or none for no dynamic Glazing.
   NOTE: Chromogenic glazing shall be considered separately from other fenestration types.
5. Orientation (North, East, South, West): The definitions in the Energy 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.

   NOTE: 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^2): Enter the area, in square feet (ft^2), of the fenestration/glazing being removed.
7. Area Added (ft^2): Enter the area, in square feet (ft^2), of the fenestration/glazing being added.
8. Net Added Area (ft^2): The difference between the Area Added (H07) and the Area Removed (H06).
9. Proposed U-factor: Enter (a) the National Fenestration Rating Council (NFRC) U-factor based on the

proposed brand and type of fenestration using NFRC certified values, (b) the default value from Table 110.6-A, (c) Equation NA6-1, or (d) the area-weighted average U-factor calculated on form CF1R-ENV-02-E, Area-Weighted Average Calculation Worksheet.

For the exceptions, up to 3 square feet (ft^2) of tubular skylights and up to 3 ft^2 of glazing in a door enter N/A, and for up to 16 ft^2 of skylight, enter 0.40. If any products (other than the exceptions) have a higher U-factor than required by Package A, first complete an ENV-02 to calculate a weighted average U-factor and attach it to this CF1R.

NOTE: Dynamic glazing is a glazing system that changes its performance U-factor and solar heat gain coefficient (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 9 and 11.

10. Proposed U-factor Source is limited to one of the following: National Fenestration Rating Council (NFRC), Table 110.6-A, Equations NA6-1 and NA6-2, or Area-Weighted Average Worksheet (ENV-02). The source of the U-factor data for the fenestration product.
11. Proposed SHGC: In climate zones 2, 4, 6-15 enter the solar heat gain coefficient (SHGC) from (a) National Fenestration Rating Council (NFRC), (b) default value from Table 110.6-B, (c) Equation NA6-2, or (d) the weighted average SHGC calculated on form CF1R-ENV-02. If A09 = 1, 3, 5 or 16, then result equals NA.
    For the exceptions – up to 3 square feet (ft^2) of tubular skylights and up to 3ft^2 of glazing in a door, enter N/A; up to 16ft^2 of skylight, enter 0.30. If any products (other than the exceptions) have a higher SHGC than required by Table 150.1-A or Table 150.1-B, first complete a form CF1R-ENV-02 to calculate the area-weighted average SHGC and attach it to this CF1R.
12. Proposed SHGC Source is limited to one of the following: National Fenestration Rating Council (NFRC), Table 110.6-B, Equations NA6-1 and NA6-2, or Area-Weighted Average Worksheet (ENV-02). The source of the solar heat gain coefficient (SHGC) data for the fenestration product.
13. Exterior Shading Device: If exterior shading devices are used to meet the solar heat gain coefficient (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.
    Input is limited to one of the following: Drop Arm Awnings, Louvered Sun Screen, Low Sun Angle Louvered Sun Screen, None, Operable Awnings, South-facing Overhang, Retractable Awnings, Roll Down Blinds Or Slats, Standard Bug Screen, Sun Screen, Vertical Roller Or Shades

    NOTES: (1) An exterior shading device is not used for products with a National Fenestration Rating Council (NFRC) rated U-factor and solar heat gain coefficient (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).
14. Combined SHGC from CF1R-ENV-03: If A09 = 1, 3, 5 or 16, then result equals NA; Else If H13 equal to None, or H04 contains Chromogenic glazing, then report N/A; Else report value from CF1R-ENV-03.

To determine compliance with allowable fenestration areas, complete rows 15-30.

15. Net Added West-facing Fenestration Area (H08): If limited, enter the total amount of west-facing fenestration ONLY that will be added to the dwelling unit when alterations are complete.
16. Is Net Added Fenestration Area (H15) ≤ to 0 for west-facing fenestration? Indicate Yes or No
    If No, the project fails prescriptive compliance – specified west-facing fenestration areas must be reduced, or compliance may be attempted using the performance approach.
17. Net Added Fenestration Area (all orientations) (H08): This field is to show the net area of added fenestration for all orientations.
18. Is Net Added Fenestration Area (H17) less than or equal to 0 for all orientations? Indicate Yes or No. If No, the project fails prescriptive compliance – specified fenestration areas must be reduced, or compliance may be attempted using the performance approach.
19. Proposed Fenestration U-factor (Windows): If H02 ≠ fixed or operable window then report N/A; If H02 = fixed or operable window then enter the single largest associated value from H09
20. Required Fenestration U-factor (Windows): Report the value from F05a.
21. Compliance Statement: If H19 = N/A then value = N/A; If H19 is ≤ H20 then report: Design Complies with the Maximum Allowed Fenestration U-value; Else report: Fenestration U-value Exceeds Allowable, **Do Not Proceed**. If the project fails prescriptive compliance – specified fenestration U-factor must be reduced, or compliance may be attempted using the performance approach.
22. Proposed Fenestration SHGC (Windows): If H02 ≠ fixed or operable window then report N/A; If H02 = fixed or operable window then enter the single largest associated value from H11 or H14; Else If H11 or H14 = N/A, then report N/A.
23. Required Fenestration SHGC (Windows): Report the value from F06a.
24. If H22 = N/A then value = N/A; If H22 is ≤ to H23, or H23 = N/A, then report: Design Complies with the Maximum Allowed Fenestration SHGC; Else report: Fenestration SHGC Exceeds Allowable, Do Not Proceed. If the project fails prescriptive compliance – specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach.
25. Proposed Fenestration U-factor (Skylights): If H02 ≠ skylight then report N/A; If H02 = skylight then enter the single largest associated value from H09.
26. Required Fenestration U-factor (Skylights): Report the value from F05b.
27. Compliance Statement: If H25 = N/A then value = N/A; If H25 is ≤ to H26 then report: Design Complies with the Maximum Allowed Fenestration U-value; Else report: Fenestration U-value Exceeds Allowable, **Do Not Proceed**; If the project fails prescriptive compliance – specified fenestration U-factors must be reduced, or compliance may be attempted using the performance approach.
28. Proposed Fenestration SHGC (Skylights): If H02 ≠ skylight then report N/A; If H02 = skylight then enter the single largest associated value from H11 or H14; Else If H11 or H14 = N/A, then report N/A.
29. Required Fenestration SHGC (Skylights): Report the value from F06b.
30. Compliance Statement: If H28 = N/A then value = N/A; If H28 is ≤ to H29 then report: Design Complies with the Maximum Allowed Fenestration SHGC; Else report: Fenestration SHGC Exceeds Allowable, **Do Not Report**; If the project fails prescriptive compliance – specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach.

I. Opaque Swinging Doors to Exterior

1. Tag/ID: Provide a name or designator for each unique door. This designator should be used consistently throughout the plan set (elevations, door schedules, etc.)
2. Area: Calculated area in square feet (ft^2) for each unique door.
3. Proposed U-factor: Enter the proposed U-factor. If value is greater than 0.20, column 06 will autocomplete as Yes.
4. Proposed U-factor Source: NFRC; or Area-weighted Average Worksheet (ENV-02).
5. Required Maximum U-factor. This field will always be 0.20.
6. Weighted Average: if I03 > 0.20, then value = Yes; Else value = No.
7. Comments: Any notes regarding location, unique conditions, or attachments.

J. Space Conditioning (SC) Systems – Heating/Cooling

Requirements of the Standards apply to a heating and cooling system alteration based on the type of alteration and the system type (Section 150.2(b)1). A completely new system will meet all mandatory and prescriptive requirements, which vary by climate zone (based on Section 150.2(b)1C).

When parts of a system are replaced, it may trigger some of the same requirements that apply to new systems and duct alterations. A Certificate of Compliance for Alterations to Space Conditioning Systems (CF1R-ALT-02) is required for each dwelling unit with a space conditioning system alteration.

1. Space Conditioning (SC) System Identification or Name: Name of the space conditioning (SC) system or any other identifying name.
2. Space Conditioning (SC) System Location or Area Served: Zone, or area, served by the space conditioning (SC) system.
3. Exemption from field Verification: Section 150.2(b)1E
    a. Space Conditioning (SC) System was not altered.
    b. Duct systems with less than 25 linear feet in unconditioned spaces as determined by visual inspection.
    c. Existing duct systems constructed, insulated or sealed with asbestos
    d. Duct systems that have been documented to have been previously sealed as confirmed through field verification and diagnostic testing in accordance with procedures in the Reference Appendices, Residential Appendix, RA3.1.

K. Water Heating Systems

Water heating compliance for an alteration is described in Section 150.2(b)1H.
Options:

1. Gas or propane water heating system; or
2. A single heat pump water heater. The storage tank shall not be located outdoors and shall be placed on an incompressible, rigid insulated surface with a minimum thermal resistance of R-10. The water heater shall be installed with a communication interface that meets either the requirements of Section 110.12(a) or has a ANSI/CTA-2045-B communication port; or
3. A single heat pump water heater that meets the requirements of NEEA Advanced Water Heater Specification Tier 3 or higher; or
4. If no natural gas is connected to the existing water heater location, a consumer electric water heater

1. Is natural gas connected to the existing water heater? Yes or No.
2. System Option (from §150.2(b)1Hiii): Indicate the prescriptive option, pick from list: 2, 3, or 4 if K01 equal No. Otherwise pick from list: 1, 2, 3 if K01 equal Yes.
3. Water Heater Type: if K03 is 1, then value = Gas or Propane water heater (Storage or instantaneous);
   Else if K03 is 2, then value = heat pump water heater;
   Else if K03 is 3, then value = NEEA Tier 3 or higher heat pump water heater;
   Else if K03 is 4, then value = Consumer Electric water heater (Heat Pump Water Heater or Electric Resistance)
4. Fuel Type: If K03 is 1, then picks from list: Natural Gas or Propane Gas; and if K03 = 2 or 3, then value Heat Pump; and if K03 = 4, then then value = Electricity.
5. Tank Volume: Tank capacity in gallons. For instantaneous water heaters, enter N/A.

Documentation Declaration Statements

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.
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.