PRESCRIPTIVE RESIDENTIAL ADDITIONS THAT DO NOT REQUIRE ECC FIELD VERIFICATION

CALIFORNIA ENERGY COMMISSION

CEC-CF1R-ADD-02-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 addition that do not require field verification for compliance. When field verification is required, a CF1R-ADD-01 shall first be registered with an ECC-Provider Data Registry.

Alterations to Space Conditioning Systems that are exempt from field verification and diagnostic testing requirements may use the CF1R-ADD-02 and CF2R-ADD-02 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 and diagnostic testing, then a CF1R-ADD-01 and CF1R-ALT-02 must be completed and registered with an ECC-Provider Data Registry.

Additions or 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 ADD-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.

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 Dwelling Units with Additions	
07	Zip Code	
08	Fuel Type	Electricity
09	Climate Zone	
10	Total Conditioned Floor Area (ft^2) (Addition)	
11	Building Type	Single Family
12	Slab Area (ft^2)	
13	Project Scope	Select as many as are applicable from the list: ☐ Addition < 300 ft^2 ☐ Addition > 300 to ≤ 400 ft^2 ☐ Addition > 400 to ≤ 700 ft^2 ☐ Addition > 700 to ≤ 1000 ft^2 ☐ ADU Addition ≤ 300 ft^2 ☐ ADU Addition > 300 to ≤ 400 ft^2 ☐ ADU Addition > 400 to ≤ 700 ft^2 ☐ ADU Addition > 700 to ≤ 1000 ft^2 ☐ JADU Addition ≤ 500 ft^2 ☐ Space Heating System ☐ Space Cooling System ☐ Space Conditioning Duct System ☐ Water Heating ☐ Fenestration (*if selected, fill out A14*) ☐ Opaque Exterior Doors>>
14	Fenestration Exceptions	User selects as many as are applicable from list: ☐ NA (do not allow other entries) ☐ Installing ≤ 3ft^2 glass in door ☐ Installing ≤ 3ft^2 tubular skylight ☐ Installing ≤ 16ft^2 skylight

B. Opaque Surface Details – Framed (Section 150.2(a) and 150.1(c)1)

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.
- Extensions of existing wood-framed walls may retain the dimensions of the existing walls and shall install cavity insulation of R-15 in a 2x4 framing, and R-21 in a 2x6 framing.

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			

C. Opaque Surface Details – Nonframed Section 150.1(c)1)

Notes:

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	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			

D. Opaque Surface Details – Masonry/Mass Walls (Section 150.1(c)1Bii)
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			

E. Slab On Grade/Concrete Raised Floor Insulation (Table 150.1-A)

Note:

Heated slab floors require mandatory slab insulation (see Table 110.8-A).

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Floor Type			
02	**Proposed** Insulation R-value	☐ N/A	☐ N/A	☐ N/A
03	**Proposed** Insulation U-factor	☐ N/A	☐ N/A	☐ N/A
04	**Required** Insulation R-value	☐ N/A	☐ N/A	☐ N/A
05	**Required** Insulation U-factor	☐ N/A	☐ N/A	☐ N/A
06	Comments			

F. Radiant Barrier (Section 150.1(c)2)

A radiant barrier is required (for Climate Zones 2-15)

- Radiant barriers shall meet specific eligibility and installation criteria to receive credit for compliance with the Building Energy Efficiency Standards for low-rise residential buildings. Refer to Reference Appendices, Residential Appendix, RA4.2.1
- The emittance of the radiant barrier shall be less than or equal to 0.05 as tested in accordance with American Society for Testing and Materials (ASTM) C1371 or ASTM E408.
- For Prescriptive Compliance the attic shall be ventilated to provide a minimum free ventilation area of not less than 1 square foot (ft^2) of vent area for each 300 square feet (ft^2) of attic floor area with a minimum of 30 percent upper vents. Refer to Reference Appendices, Residential Appendix, RA4.2.1.
- Ridge vents or gable end vents are recommended to achieve the best performance. The material should be cut to allow for full airflow to the venting. Refer to Reference Appendices, Residential Appendix, RA4.2.1.1

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Radiant Barrier installed below the roof deck and on all gable end walls	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A	☐ Yes ☐ No ☐ N/A
02	Comments			

G. Roofing Products (Cool Roof) (Section 150.1(c)11)

Notes:

- Exception 1: Any roof area covered by building integrated photovoltaic (PV) panels and solar thermal panels are not required to comply withthe Cool Roof requirements.
- Exception 2: Roof constructions with weight of 25 pounds per square foot (lb/ft^2) are also not required to comply with the 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	Exception			
03	Roof Pitch			
04	Method of Compliance			
05	Product Type			
06	CRRC Product ID Number	☐ N/A	☐ N/A	☐ N/A
07	**Proposed** Initial Solar Reflectance	☐ N/A	☐ N/A	☐ N/A
08	**Proposed** Aged Solar Reflectance	☐ N/A	☐ N/A	☐ N/A
09	**Proposed** Thermal Emittance	☐ N/A	☐ N/A	☐ N/A
10	**Proposed** SRI (Optional)	☐ N/A	☐ N/A	☐ N/A
11	**Required** Aged Solar Reflectance	☐ N/A	☐ N/A	☐ N/A
12	**Required** Thermal Emittance	☐ N/A	☐ N/A	☐ N/A
13	**Required** SRI (Optional)	☐ N/A	☐ N/A	☐ N/A

H. Fenestration/Glazing Allowed Areas and Efficiencies (Section 150.2(a)1)

Field	Field Name	Data Entry 1	Data Entry 1	Data Entry 1
01	Addition Type ft^2			
02	**Maximum Allowed Fenestration Area for All Orientations ft^2 – The Greater of:** Maximum Calculated based on Allowed %			
03	**Maximum Allowed Fenestration Area for All Orientations ft^2 – The Greater of:** Maximum Calculated Allowed ft^2			
04	**Maximum Allowed West-Facing Fenestration Area Only ft^2 – The Greater of:** Maximum Calculated based on Allowed %	☐ N/A	☐ N/A	☐ N/A
05	**Maximum Allowed West-Facing Fenestration Area Only ft^2 – The Greater of:** Maximum Calculated Allowed ft^2	☐ N/A	☐ N/A	☐ N/A
06	Maximum Allowed U-factor (Windows)			
07	Maximum Allowed U-factor (Skylights)			
08	Maximum Allowed SHGC (Windows)			
09	Maximum Allowed SHGC (Skylights)	☐ N/A	☐ N/A	☐ N/A
10	Comments			

I. Fenestration Proposed Areas and Efficiencies (Section 150.2(a))

Note:

If meeting Exception 1 to 150.1(c)3A, New dwelling units with a conditioned floor area of 500 square feet or less in Climate Zone 5 may comply with a maximum U-factor of 0.30.

If meeting Exception 2 to 150.1(c)3A, Installing less than or equal to 3 square feet (ft^2) glass in door, or less than or equal to 3 square feet (ft^2) tubular skylight, it is assumed to meet the minimum required U-factor of 0.27 for climate zones 1 through 5, 11 through 14 and 16, and 0.30 for climate zones 6 through 10 and 15 & SHGC of 0.23 for climate zones 2, 4, 6 through 15.

If meeting Exception 3 to 150.1(c)3A, If meeting Exception 1 to 150.1(c)3A, Installing less than or equal to 16 square feet (ft^2) tubular skylight, it is assumed to meet the minimum required U-factor (0.40) & SHGC (0.30). In Climate Zones 1, 3, 5, and 16 there is no SHGC requirement. Doors with greater than or equal to 25 percent glazing area are considered glazed doors and are treated as fenestration products.

Table I-1

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)			
08	Proposed West Facing Fenestration 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	☐ N/A	☐ N/A	☐ N/A
13	Exterior Shading Device			
14	Combined SHGC from CF1R-ENV-03	☐ N/A	☐ N/A	☐ N/A

Table I-2

Field	Field Name	Data Entry
15	Total Proposed Fenestration Area	
16	Maximum Allowed Fenestration Area	
17	**Compliance Statement:** Total Proposed Fenestration Area ≤ Maximum Allowed Fenestration Area	☐ Yes ☐ No ☐ N/A
18	Total Proposed West-Facing Fenestration Area	☐ N/A
19	Maximum Allowed West-Facing Fenestration Area	☐ N/A
20	**Compliance Statement:** Total Proposed West-Facing Fenestration Area ≤ Maximum Allowed West-Facing Fenestration Area	☐ Yes ☐ No ☐ N/A
21	Proposed Fenestration U-factor (Windows)	☐ N/A
22	Required Fenestration U-factor (Windows)	
23	**Compliance Statement:** Proposed Fenestration U-factor ≤ Required Fenestration U-factor	☐ Yes ☐ No ☐ N/A
24	Proposed Fenestration SHGC (Windows)	☐ N/A
25	Required Fenestration SHGC (Windows)	☐ N/A
26	**Compliance Statement:** Proposed Fenestration SHGC ≤ Required Fenestration SHGC	☐ Yes ☐ No ☐ N/A
27	Proposed Fenestration U-factor (Skylights)	☐ N/A
28	Required Fenestration U-factor (Skylights)	
29	**Compliance Statement:** Proposed Fenestration U-factor ≤ Required Fenestration U-factor	☐ Yes ☐ No ☐ N/A
30	Proposed Fenestration SHGC (Skylights)	☐ N/A
31	Required Fenestration SHGC (Skylights)	
32	**Compliance Statement:** Proposed Fenestration SHGC ≤ Required Fenestration SHGC	☐ Yes ☐ No ☐ N/A

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

Notes:

- Any door with 25 percent or more glass is considered a glazed door and is counted as a fenestration product in Tables H and I.
- 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			

L. Water Heating Systems (Section 150.2(a)1D)

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

Options:

1. 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
2. A single heat pump water heater that meets the requirements of NEEA Advanced Water Heater Specification Tier 3 or higher; or
3. For addition that are 500 square feet or less, an electric water heater with point of use distribution as specified in the Reference Appendices, Residential Appendix, RA4.4.5

Field	Field Name	Data Entry 1	Data Entry 2	Data Entry 3
01	Water Heating System ID or Name			
02	System Option (from §150.2(a)1D)			
03	# of Water Heaters/ Compressors in System			
04	Water Heater Type			
05	Fuel Type			
06	Tank Location			
07	Distribution Type			

K. Space Conditioning (SC) Systems – Heating/Cooling (Section 150.2(b) or Section 150.1(c)7)
Alterations to space conditioning systems shall be exempt from field verification and diagnostic testing requirements as prerequisite for use of the CF1R-ADD-02 and CF2R-ADD-02 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-ADD-01 and CF1R-ALT-02 shall be completed and registered with an ECC Provider Data Registry. In each row below for each space conditioning system, check the box that indicates the exemption from field verification compliance:
a: space conditioning system was not altered;
b: less than 25 feet (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.

01	02	03
SC System Identification or Name	SC System Location or Area Served	Exemption from ECC Verification
		☐ a ☐ b ☐ c ☐ d
		☐ a ☐ b ☐ c ☐ d
		☐ a ☐ b ☐ c ☐ d
		☐ a ☐ b ☐ c ☐ d
		☐ a ☐ b ☐ c ☐ d
		☐ a ☐ b ☐ c ☐ d
		☐ a ☐ b ☐ c ☐ d
		☐ a ☐ b ☐ c ☐ d

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 No. Address City/State/Zip Phone

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

CF1R-ADD-02-E User Instructions

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

Minimum requirements for prescriptive addition compliance can be found in Building Energy Efficiency Standards Section 150.2(a), and Table 150.1-A. Completing these forms will require that you have the Reference Appendices for the 2025 Building Energy Efficiency Standards, which contain the Joint Appendices used to determine climate zone and to complete the section for opaque surfaces. When the term CF1R is used it means the CF1R-ADD-02. 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 numbers are given separately.

If any part of the addition does not comply, prescriptive compliance fails, in which case the performance (or computer) compliance approach may be used in an attempt to achieve compliance. Only the new construction is required to meet the requirements specified in this documentation. If any alterations to the existing building are occurring, those are documented on one or more of the CF1R-ALT forms.

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. The Standards (section 100.1) include the following additional details for determining orientation:
    - 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 Dwelling Units with Additions: 1 for single-family
7. Zip Code: 5-digit zip code for the project location (used to determine climate zone).
8. Fuel Type: Electricity.
    NOTE: Prescriptive compliance only allows electricity if natural gas is not connected to the building.
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 addition.
11. Building Type: Single Family (includes duplex)
12. Slab Area: Area of the first floor slab of the addition (if any) in square feet (ft^2).
13. Project Scope: 300 square feet (ft^2) or less, greater than 300 ft^2 up to 400 ft^2, greater than 400 ft^2 up to 700 ft^2, or greater than 700 ft^2 up to 1000 ft^2, Accessory Dwelling Unit (ADU) Addition 300 square feet (ft^2) or less, Accessory Dwelling Unit (ADU) Addition greater than 300 ft^2 up to 400 ft^2, Accessory Dwelling Unit (ADU) Addition greater than 400 ft^2 up to 700 ft^2, Accessory Dwelling Unit (ADU) Addition greater than 700 ft^2 up to 1000 ft^2 , or Junior Accessory Dwelling Unit (JADU) Addition 500 ft^2 or less, space heating system, space cooling system, space conditioning duct system, water heating, or fenestration.

14. Exceptions to Fenestration U-factor and SHGC: Installing less than or equal to 3 square feet (ft^2) glass in door, Installing less than or equal to 3 ft^2 tubular skylight, Installing less than or equal to 16 ft^2 skylight, or NA.

B. Opaque Surface Details - Framed

Walls: Additions of any size must meet the requirements of Table 150.1-A when using prescriptive compliance. However, extensions of existing walls require only R-15 wall insulation in 2x4 constructions, or R-21 wall insulation in 2x6 or larger constructions.

1. Tag/ID: A label (if any) from the plans, such as A1.4 or wall.
2. Assembly Type: Roof, Ceiling, Wall, Floor, Attic.
3. Frame Type: Wood or Metal.
4. Frame Depth: Nominal dimensions (in inches) of framing material such as 2x4, 2x6, 2x8, 2x10 or 2X14.
5. Frame Spacing: 16, 24, or 48 (inches on center).

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

6b. Proposed Continuous Insulation: R-value of rigid or continuous insulation (not interrupted by framing). See applicable table of the Reference Appendices for construction type.

7. Proposed U-factor: The U-factor for the proposed assembly must be less than or equal to column 8 or have an attached Area Weighted Average Calculation Worksheet (CF1R-ENV-02-E) to show that a weighted U-factor for multiple assemblies will meet the maximum value in column 8.
8. Required U-factor or R-value: From Table 150.1-A or B. Value required based on climate zone and assembly type.
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, for example, A1.4 or wall.
2. Assembly Type: Roof, Wall.
3. Assembly Materials: SIP OSB, SIP I-Joist, SIP Single 2x, SIP Double 2x, ICF 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: Proposed U-factor from Reference Appendices, Joint Appendix, JA4 or CF1R-ENV-02-E. 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 Grade/Below Grade: Indicate whether the mass wall is installed above grade o below grade.
3. Mass Masonry/Wall Type: Masonry, Clay Brick, Clay Hollow Unit, Concrete Masonry Unit (CMU) Light Weight, CMU Medium Weight, CMU Normal Weight, Concrete. See Reference Appendices, Joint Appendix, JA4 for guidance.
4. Mass Masonry 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 7 or 8) 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 9 or 10) for interior insulation will be completed based on the Table 150.1-A requirements for the wall type.

E. Slab On Grade/Concrete Raised Floor Insulation

Slab edge performance specifications and installation criteria are found in Sections 150.0(l) and 150.1(c)1D (Table 150.1-A). Requirements vary by climate zone and slab conditions.

1. Floor Type: Types include slab-on-grade or Raised slab, Heated Slab.
    - Unheated slab-on-grade floors require slab edge insulation in climate zone 16 only.
    - Raised slab must be insulated to R-8 in climate zones 1, 2, 11, 13, 14 and 16, R-4 in climate zones 12 and 15, and no insulation is required in climate zones 3-10.

    Proposed Insulation R-value: When required, insulation can be specified by either R-value or U-factor. When specifying an R-value complete column 2. Use the same descriptor (R-value or U-factor) throughout Table E.

    Select from list: R-0; R-4; R-5; R-7; R-8; R-10 vertical; R-10 vertical and R-7 horizontal; or NA. Otherwise If E01 = 'Heated slab' or A09 = 16, then 'NA' not allowed.
2. Proposed Insulation U-Factor: When required, specify the U-factor of proposed insulation in column 3. Use the same descriptor (R-value or U-factor) throughout Table E.
3. Required Insulation R-value: Specify the value required, which will vary by climate zone and type of slab. Values are from Table 150.1-A.
4. Required Insulation U-factor: Specify the value required, which will vary by climate zone and type of slab. Values are from Table 150.1-A.
5. Comments: Any notes regarding location, unique conditions, or attachments.

    NOTE: There is a mandatory slab edge insulation requirement for heated slab floors. Since mandatory requirements are not listed on the Certificate of Compliance, this is provided for information purposes only. The specific requirements are in Sections 110.8(g) and Table 110.8-A.

F. Radiant Barrier

1. Radiant Barrier installed below the roof deck and on all gable end walls: Yes, No or N/A.
2. Comments: Any notes regarding location, unique conditions, or attachments. If F01 = NA, require user Input.

    NOTE: Radiant barrier performance specifications and installation criteria are found in Sections 110.8(j) and 150.1(c)2, and in Reference Appendices, Residential Appendix RA4.2.1.

G. Roofing Products (Cool Roof)

Roofing requirements are found in Section 110.8(i) and 150.1(c)11. Depending on the climate zone and roof slope, a cool roof (defined as a minimum aged solar reflectance and thermal emittance, or a minimum SRI) may be required by Table 150.1-A.

NOTE: Exceptions include (1) additions of 300 square feet (ft^2) or less, (2) low-slope roofs (pitch less than 2:12) in climate zones 1-12, 14 and 16; (3) steep slope roof (pitch greater than or equal to 2:12) in climate zones 1-9 and 16; (4) roof constructions that have thermal mass over the roof membrane with at least 25 pounds per square foot (lb/ft^2); and (5) any roof area covered by building integrated photovoltaic (PV) panels and solar thermal panels (the area of roof not covered by PV panels would still need to meet any applicable cool roof requirements).

1. Tag/ID: A label (if any) from the plans, such as R1.
2. Exception: User indicates any exceptions. Mass roofs are not required to have a cool roof even if the climate zone specifies minimum performance requirements.
   User inputs: User selects from list: 1, 2, or None; If 1 or 2, value = “Meets cool roof requirements”; Elseif None, go to G03.
3. Roof Pitch: Expressed as 4:12, for example, which means the roof rises 4 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.
   User Inputs: select from list: Roof pitch is ≥ 2:12 or Roof pitch is < 2:12
4. Method of Compliance: Indicate if the method of compliance is going to be based on Aged Solar Reflectance and Thermal Emittance or if it is going to be based on the Solar Reflectance Index (SRI).
   User Inputs: select from list: Not in an applicable climate zone, Aged Solar Reflectance and Thermal Emittance, or SRI.
5. Product Type: See Cool Roof Rating Council’s directory. Generally, product types include single-ply roof, wood shingles, asphalt roof, metal roof, tile roof.
6. Cool Roof Rating Council (CRRC) Product ID Number: The CRRC Product ID Number is obtained from the Cool Roof Rating Council’s Rated Product Directory. Products are listed by manufacturer, brand, type of installation, roofing material, and color, as well as product performance.

7. Proposed Initial Solar Reflectance: Based on the product chosen from the Cool Roof Rating Council’s Rated Product Directory. If using default assumption indicate NA since the Aged solar reflectance is available.
   User input: if G04 = ‘Not in an applicable climate zone’ then result = NA; Else If the user knows what they are installing, the user enters the DecimalNonnegative (x.xx, value must be > 0 and < 1) value from the CRRC Directory, Else allow user to enter NA.
8. Proposed Aged Solar Reflectance: Value is from the Cool Roof Rating Council’s Rated Product 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

9. Proposed Thermal Emittance: From the product specification default value. If using a calculated SRI, enter the Thermal Emittance used to calculate SRI.
10. 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.
11. Required Aged Solar Reflectance: Based on climate zone and roof slope.
12. Required Thermal Emittance: Based on climate zone and roof slope.
13. Required SRI: Based on climate zone and roof slope.

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.

H. Fenestration/Glazing Allowed Areas and Efficiencies

Fenestration areas are expressed in square feet, not square inches. The climate zone and size of the addition will affect the area of fenestration (also known as glazing) allowed. If limited to 20%, for example, this is calculated as Conditioned Floor Area (CFA) of the addition x 0.20 =total square footage (ft^2) of fenestration allowed.

For additions that are 1000 square feet (ft^2) or less, but greater than 700 ft^2, the limit of total fenestration is the greater of 175 ft^2 or 20 percent of the conditioned floor area (CFA) of the addition.
For additions that are 700 ft^2 or less, but greater than 400 ft^2, the limit of total fenestration is the greater of 120 ft^2 or 25 percent of the CFA of the addition.
For additions that are 400 ft^2 or less, the limit of total fenestration is the greater of 75 ft^2 or 30 percent of the CFA of the addition.
For additions that are 1,000 ft^2 or less, when west-facing fenestration is limited (in climate zones 2, 4, and 6-15), it is limited to either 70 ft^2 or 5 percent of the CFA (for additions greater than 700 ft^2) or 60 ft^2 (for additions that are 700 ft^2 or less).

1. Addition Type ft^2: Based on “Project Scope.” The addition’s area in square feet: less than or equal to 400 ft^2, greater than400 ft^2 to less than or equal to 700 ft^2, or greater than 700 ft^2 to less than or equal to 1,000 ft^2.

2. - 9. These fields will be completed based on conditioned floor area of the addition and/or climate zone. The values in these fields will be entered into Section I.

Maximum allowed fenestration area for all orientations is the greater of the values in columns 2 or 3:

2. Maximum Calculated based on Allowed %: The addition’s conditioned floor area (CFA) multiplied by the allowed percentage. The maximum total fenestration area is 30 percent for additions up to 400 square feet (ft^2), 25 percent for additions greater than 400 ft^2 but no greater than 700 ft^2, and 20 percent for additions greater than 700 ft^2.

3. Maximum Calculated Allowed ft^2: The maximum total fenestration area is 75 square feet (ft^2) for additions up to 400 ft^2, 120 ft^2 for additions greater than 400 ft^2 but no greater than 700 ft^2, and 175 ft^2 for additions greater than 700 ft^2.

Maximum allowed west-facing area is the greater of the values in columns 4 or 5:

4. Maximum Calculated based on Allowed %: The maximum west-facing fenestration area (in climate zones 2, 4, and 6-15) is 5 percent for additions greater than 700 ft^2.
5. Maximum Calculated Allowed ft^2: The maximum west-facing fenestration area (in climate zones 2, 4, and 6-15) is 60 square feet (ft^2) for additions no greater than 700 ft^2, and 70 ft^2 for additions greater than 700 ft^2.

Addition CFA:	**≤ 400 ft^2**		**> 400 ft^2 to ≤ 700 ft^2**		**> 700 ft^2 to ≤ 1,000 ft^2**	
	The Greater Of:		**The Greater Of:**		**The Greater Of:**	
Orientation	**Percentage**	**Area (ft^2)**	**Percentage**	**Area (ft^2)**	**Percentage**	**Area (ft^2)**
West-facing (CZs 2, 4, 6-15)	-	60	-	60	5%	70
All Orientations	30%	75	25%	120	20%	175

NOTE: West includes any vertical fenestration oriented to within 45 degrees of true west (in either direction), including 45 degrees north of west, any skylights oriented west, and skylights facing any direction with a pitch of less than 1:12.

6. Maximum Allowed U-factor (Windows): Maximum area-weighted average of 0.30 for climate zones 6-10 and 15, and 0.27 for climate zones 1-5, 11-14 and 16.
7. Maximum Allowed U-factor (Skylights): Maximum area-weighted average of 0.30 climate zones 6-10 and 15, and 0.27 for climate zones 1-5, 11-14 and 16, unless meeting one of the Exceptions to 150.1(c)3A. If meeting one of Exceptions, enter 0.40.
8. Maximum Allowed SHGC (Windows): Maximum area-weighted average of 0.23 for climate zones 2, 4, and 6-14 and 0.20 for climate zone 15; otherwise N/A.
9. Maximum Allowed SHGC (Skylights): Maximum area-weighted average of 0.23 for climate zones 2, 4, 6 through 15, unless meeting one of the Exceptions to 150.1(c)3A. If meeting one of the Exceptions, enter 0.30; otherwise, N/A
10. Comments: Any notes regarding location, unique conditions, or attachments.

I. Fenestration Proposed Areas and Efficiencies

1. Tag/ID: Provide a name or designator for each unique type of fenestration surface. This designator should be used consistently throughout the plan set (elevations, finish schedules, etc.) such as Window-1, Skylight-1, etc. to identify each surface. It should also be consistently used on the other compliance documents.
2. Fenestration Type: Indicate the type of fenestration construction e.g., Fixed Window, Operable Window, Skylight, Tubular Skylight, or Glass in Door.
   NOTE: Doors with glazing are counted in one of two ways. The entire area of a door with 25 percent or more glazing is considered a glazed door and is treated as fenestration. A door with less than 25 percent glazing can be considered an opaque swinging door, or can be calculated as the actual glass area with a 2-inch (0.17 ft) frame all around.
3. Frame Type: Metal, Metal Thermal Break, or Non-metal.
4. Dynamic Glazing: Indicate whether the fenestration has an integrated shading device, chromogenic glazing, or none for no dynamic glazing.
   NOTE: Chromogenic glazing shall be considered separately from other fenestration types.
5. Orientation: Orientation can be North, East, South, West, or degrees. If documentation is for a building that may be built in any direction, in a climate zone that limits west-facing fenestration, complete this section assuming the side of the building with the most fenestration faces west.
   NOTE: West includes any vertical fenestration oriented to within 45 degrees of true west, excluding 45 degrees south of west; any skylights oriented west; and skylights facing any direction with a pitch of less than 1:12.
6. Number of Panes: Indicate the number of panes for each Tag/ID; is it a single, double, or triple pane window? Enter either: 1, 2, or 3 to represent the panes.
7. Proposed Fenestration Area ft^2: The size of any windows, doors with glass, or skylights within the floor area of the addition (combine windows with the same characteristics). Indicate the area in square feet (ft^2) of each exterior fenestration type, including west-facing fenestration.
8. Proposed West Facing Fenestration Area ft^2: In climate zones 2, 4, and 6-15, enter the size of any west-facing windows, doors with glass, or skylights within the floor area of the addition. Indicate the area in square feet (ft^2) of each exterior west-facing fenestration type separately.
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; or
   (b) the default value from Table 110.6-A; or
   (c) the NA6.2 alternate default U-factor (for non-rated site-built fenestration only); or
   (d) the area-weighted average from CF1R-ENV-02-E.

   If any products (other than the exceptions noted below) have a higher U-factor than 0.30, first complete a CF1R-ENV-02-E to calculate the area-weighted average U-factor, which must be 0.30 or less, and attach it to the CF1R-ADD-02-E.

   NOTES: (1) If meeting Exception 1 to 150.1(c)3A, New dwelling units with a conditioned floor area of 500 square feet or less in Climate Zone 5 may comply with a maximum U-factor of 0.30.
   (2) For the exception – up to 3 square feet (ft^2) of glass in door, enter 0.30 for climate zones 6 through 10 and 15 and enter 0.27 for climate zones 1 through 5, 11 through 14 and 16.
   (3) For the exceptions - up to 3 square feet (ft^2) of tubular skylights and up to 16 square feet (ft^2) of skylight area, enter 0.40.

(4) 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: The source of the U-factor data for the fenestration product – indicate whether NFRC, Tables 110.6-A, Equations NA6-1, or Area-weighted Average Worksheet (ENV-02).
11. Proposed SHGC: In climate zones 2, 4, and 6-16, enter
    (a) the National Fenestration Rating Council (NFRC) solar heat gain coefficient (SHGC) based on the proposed brand and type of fenestration using NFRC certified values; or
    (b) the default value from Table 110.6-B; or
    (c) the NA6.3 alternate default SHGC) (for non-rated site-built fenestration only); or
    (d) the area-weighted average from CF1R-ENV-02-E.

    If any products (other than the exceptions noted below) have a higher solar heat gain coefficient (SHGC) than 0.23 in a climate zone with a maximum SHGC value, first complete a CF1R-ENV-02-E to calculate the area-weighted average SHGC, which must be 0.23 or less, and attach it to the CF1R-ADD-02-E.

    NOTES:
    (1) For the exceptions - up to 3 square feet (ft^2) of tubular skylights and up to 16 square feet (ft^2) of skylight area, enter 0.30.
    (2) For the exception – up to 3 square feet (ft^2) of glass in door, enter 0.23 for climate zones 2, 4, and 6-15; otherwise N/A .

12. Source: The source of the U-factor and solar heat gain coefficient (SHGC) data for the fenestration product—indicate whether National Fenestration Rating Council (NFRC), Tables 110.6-B, Equations NA6-2, or the Area-weighted Average Worksheet (CF1R-ENV-02).
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-E Solar Heat Gain Coefficient Worksheet) and attach the CF1R-ENV-03-E.

    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) Chromogenic glazing shall be considered separately from other fenestration.

14. Combined SHGC from CF1R-ENV-03: If exterior shading devices are combined with the solar heat gain coefficient (SHGC) value of the fenestration to meet the prescriptive SHGC requirements (as indicated in column I. 13), indicate the SHGC calculated on form CF1R-ENV-03 and attach the form for each window with an exterior shading device.

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

15. Total Proposed Fenestration Area: The sum of column I.07 plus I.08.
16. Maximum Allowed Fenestration Area: From Section H., report the greater value of column 02 or 03.
17. Compliance Statement: Verify whether I.15 is less than or equal to I.16. 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.
18. Total Proposed West-Facing Fenestration Area: The sum of column I.08.

19. Maximum Allowed West-Facing Fenestration Area: From Section H., report the greater value of column 04 or 05.
20. Compliance Statement: Verify whether I. 18 is less than or equal to I. 19. 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.
21. Proposed Fenestration U-factor (Windows): If necessary, report the area-weighted average U-factor from the completed CF1R-ENV-02-E. Otherwise, report the largest value from column I.09.
22. Required Fenestration U-factor (Windows): From Section H., report the value of column 6.
23. Compliance Statement: Verify whether I. 21 is less than or equal to I. 22. Indicate Yes or No. If No, the project fails prescriptive compliance—specified fenestration U-factors must be reduced, or compliance may be attempted using the performance approach.
24. Proposed Fenestration SHGC (Windows): If necessary, report the area-weighted average SHGC from the completed CF1R-ENV-02-E. Otherwise, report the largest value from column I.11 or I.14.
25. Required Fenestration SHGC (Windows): From Section H., report the value of column 08.
26. Compliance Statement: Verify whether I. 24 is less than or equal to I.25. Indicate Yes or No. If No, the project fails prescriptive compliance—specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach.
27. Proposed Fenestration U-factor (Skylights): If necessary, report the area-weighted average U-factor from the completed CF1R-ENV-02-E. Otherwise, report the single largest associated value from column I.09.
28. Required Fenestration U-factor (Skylights): From Section H., report the value of column 07.
29. Compliance Statement: Verify whether I. 27 is less than or equal to I. 28. Indicate Yes or No. If No, 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 necessary, report the area-weighted average SHGC from the completed CF1R-ENV-02-E. Otherwise report the single largest associated value from column I.11 or I.14.
31. Required Fenestration SHGC (Skylights): From Section H., report the value from column 09.
32. Compliance Statement: Verify whether I. 30 is less than or equal to I. 31. Indicate Yes or No. If No, the project fails prescriptive compliance – specified fenestration SHGC must be reduced, or compliance may be attempted using the performance approach.

J. 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. Source: National Fenestration Rating Council (NFRC) or Reference Appendices, Joint Appendix, Table 4.5.1, 110.6-A and 110.6-B, Equations NA6-1 and NA6-2, or Area-Weighted Average Worksheet (CF1R-ENV-02).
5. Required Maximum U-factor. This field will always be 0.20.
6. Weighted Average: If column 03 is greater than 0.20 U-factor, attach form CF1R-ENV-02-E:
7. Comments: Any notes regarding location, unique conditions, or attachments.

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

If an existing space conditioning system will condition an addition, the prescriptive requirements do not apply to that system (Exception 4 to Section 150.2(a)). The enforcement agencies may require verification that the capacity of the existing heating system is adequate to meet the added load of the additional conditioned floor area. Since there is no health and safety code requirement to provide cooling, the enforcement agency will not ask for verification that the capacity of the existing cooling system is adequate to meet the added load of the additional conditioned floor area.

If a new system is installed complete a Certificate of Compliance for Alterations to Space Conditioning Systems (CF1R-ALT-02).

1. Space Conditioning (SC) System Identification or Name: Name of the Space Condition (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

L. Water Heating Systems

Water heating compliance for an addition is described in Section 150.2(a)1D. When a water heater is added as part of an addition in a single dwelling the Prescriptive Standards allow three options under Section 150.2(a)1D.

1. Water Heating System Identification or Name: Name of the Water Heating System or any other identifying name.
2. System Option (from §150.2(a)1D): Indicate the prescriptive system option: 1, 2, 3.
    1) 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
    2) A single heat pump water heater that meets the requirements of NEEA Advanced Water Heater Specification Tier 3 or higher; or
    3) For addition that are 500 square feet or less, an instantaneous electric water heater with point of use distribution as specified in the Reference Appendices, Residential Appendix, RA4.4.5

3. Water Heater Type: Electric water heater, Heat pump water heater, or NEEA Tier 3 or higher heat pump water heater.
   If L03 =1 then value = Heat pump water heater; if L03 = 2 then value = NEEA Tier 3 or higher heat pump water heater; if L03 = 3, then value = Electric water heater
4. Number of Water Heaters/Compressors in System: Enter the total number of water heaters or compressors for each system.
5. Fuel Type: Electricity.
6. Tank Location: For heat pump water heaters, indicated whether the storage tank is located in the garage or conditioned space. Otherwise, enter ‘n/a’.

7. Distribution Type: If pursuing Option 3, then this will be ‘point of use distribution’. Otherwise, enter ‘Standard’.

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.