CERTIFICATE OF INSTALLATION

Note: This table completed by HERS Registry.

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

A. General Information

Field	Field Name	Data Entry
01	Construction Type	
02	Total Attic Area (ft^2)	
03	Radiant Barrier Installed?	
04	Attic Space Ventilated or Unventilated?	
05	Minimum Ventilation Method of Compliance	

Note: In order to comply with the 1/300 exception, a Class I or II vapor retarder is required to be installed in climate zones 14 and 16.

B. Radiant Barrier

Field	Field Name	Data Entry
01	Brand Name and Product Number	
02	Installation Type	

C. Schedule of Lower Vents

The Net Free Area (NFA) of a manufactured product is stated on the packaging or on the manufacturer's specification data sheet. For non-manufactured products, assume that the net free area is one third of the total aperture area.

01	02	03	04
Type of Vent	NFA Per Vent (in^2)	Number of Vents Installed	Total NFA Per Vent Type (in^2)

D. Schedule of Upper Vents

The Net Free Area of a manufactured product is stated on the packaging or on the manufacturer's specification data sheet. For non-manufactured products, assume that the net free area is one third of the total aperture area.

01	02	03	04
Type of Vent	NFA Per Vent (in^2)/Per Liner Foot (ft)	Number of Vents/Linear Feet Installed	Total NFA Per Vent Type(in^2)

E. Required Vent Area

Field	Field Name	Data Entry
01	Combined NFA of Installed Upper and Lower Vents (in^2)	
02	Minimum Required Combined NFA of Upper and Lower Vents (in^2)	
03	NFA of Installed Upper Vents (in^2)	
04	Minimum Required NFA of Upper Vents (in^2)	
05	Compliance Statement:	

F. Radiant Barrier – Additional Requirements

Radiant Barrier

01	Radiant barrier must be installed on all vertical surfaces in the attic including gable ends.
02	The emittance of the radiant barrier shall be less than or equal to 0.05 as tested with ASTM C1371, or E408.
03	The product shall meet all requirements for California certified insulation materials [radiant barriers] of the Department of Consumer Affairs, Bureau of Household Goods and Services, as specified by California Referenced Standards Code (CCR), Title 24, Part 12, Chapter 12-13, Standards for Insulating Material
04	When determining the Total Attic Area, the area over unconditioned spaces such as the garage is included when the attic spaces are connected.

G. Attic Ventilation – Additional Requirements

Lower Vents

01	Lower vents are within one foot (1-ft) of the eave.

Upper Vents

02	Upper vents are within three feet (3-ft) of the ridge.

Vent Area

03	The NFA of upper vents must be within required NFA range of upper vents Note: per Exception to R806.2 of the California Building Code (CBC) Title 24, Part2, Vol.2.5, if the net free ventilating area is less than 1:150, then the upper ventilation must be at least 40% and no more than 50%. Part 2 contains additional requirements that must be met if the area is less than 1:150.

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

H. Roofing Products (Cool Roof) Installation Information

Field	Field Name	Entry 1	Entry 2	Entry 3
01	Tag/ID			
02	Roof Pitch			
03	Cool Roof Rating Council (CRRC) Product ID Number			
04	Product Type			
05	Cool Roof Rating Council (CRRC) Listed Aged Solar Reflectance			

Installed

06	Initial Solar Reflectance			
07	Aged Solar Reflectance			
08	Thermal Emittance			
09	SRI			

Required

10	Aged Solar Reflectance			
11	Thermal Emittance			
12	SRI			

I. Roofing Products (Cool Roof) – Additional Requirements

Field	Field Name
01	Any roof area covered by building integrated photovoltaic panels and solar thermal panels are exempt from the above Cool Roof requirements.
02	Liquid field applied coatings must comply with installation criteria from section 110.8(i)4.
03	Mass roof 25 pounds per square foot (lb/ft^2) or greater: Mass roofs are not required to have a cool roof even if the climate zone specifies minimum performance requirements.

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

CALIFORNIA ENERGY COMMISSION

CEC-CF2R-ENV-04-E

Documentation Author's Declaration Statement

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

Documentation Author Name:	Documentation Author Signature:
Company:	Signature Date:
Address:	CEA/ HERS Certification Identification (if applicable):
City/State/Zip:	Phone:

Responsible Person's Declaration Statement

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

1. The information provided on this Certificate of Installation is true and correct.
2. I am either: a) a responsible person eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation, and attest to the declarations in this statement, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations and the installation conforms to the requirements given on the Certificate of Compliance, plans, and specifications approved by the enforcement agency.
4. I understand that a registered copy of this Certificate of Installation shall be posted or made available with the building permit(s) issued for the building, and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to ensure this requirement is accomplished.
5. I understand that a registered copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to ensure this requirement is accomplished.

Responsible Designer Name:	Responsible Designer Signature:
Company:	Date Signed:
Address:	License:
City/State/Zip:	Phone:

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

CF2R-ENV-04-E User Instructions

A. General Information

1. Construction Type: Using the drop down menu, select the roofing construction type (e.g., cathedral ceiling or attic).
2. Total Attic Area (ft^2): Enter the total attic area over conditioned space in square feet (ft^2). Include areas over unconditioned space when the attic spaces are not separated by a continuous air barrier.
3. Radiant Barrier Installed?: Using the drop down menu, select "Yes" if a radiant barrier is being installed.
4. Attic Space Ventilated or Unventilated?: Using the drop down menu, indicate whether the attic space is ventilated or unventilated.
5. Minimum Ventilation Method of Compliance: Using the drop down menu, indicate the method of compliance used to meet the minimum ventilation requirements (e.g., 1/150 or 1/300).
   Note: In order to comply with the 1/300 exception, a Class I or II vapor retarder is required to be installed in climate zones 14 and 16.

B. Radiant Barrier

1. Brand Name and Product Number: Enter the brand name and product number of the product used.
2. Installation Type: Using the drop down menu, indicate the installation type from the following list:
   i. Attached to underside of roof deck;
   ii. Attached to bottom of truss/rafters;
   iii. Attached between truss/rafters;
   iv. Draped over top of truss/rafters;
   v. Attached to underside of roof deck with air space; or
   vi. Attached to underside of roof deck with baffle.

   One of these six installation methods must be used; no other methods are allowed.

C. Schedule of Lower Vents

In Table C, list all the lower vents that are installed in the attic(s). Lower vents are within one foot (1-ft) of the eave.

For each type of vent, indicate:

1. Type of Vent: For example, eyebrow vent, eave vent, or round vent.
2. NFA per Vent/per Linear Foot: Net free area (NFA) of each individual vent (in^2) or net free area (NFA) per linear foot. The net free area (NFA) of a manufactured product is stated on the packaging or on the manufacturer's specification data sheet. For non-manufactured products, assume that the net free area is one third of the total aperture area.
3. Number of Vents/Linear Feet Installed: Indicate how many vents, or how many linear feet of this type are installed in the attic(s).
4. Total NFA Per Vent Type: The sum of values in column 02 for each Type of Vent used.

D. Schedule of Upper Vents

In table D., list all the installed upper vents in the same way as was done for lower vents (see Section C. above). Upper vents are within three feet (3-ft) of the ridge.

1. Type of Vent: For example, eyebrow vent, eave vent, round vent, or ridge vent.

2. NFA per Vent/per Linear Foot: Net free area (NFA) of each individual vent (in^2) or net free area (NFA) per linear foot. The net free area (NFA) of a manufactured product is stated on the packaging or on the manufacturer's specification data sheet. For non-manufactured products, assume that the net free area is one third of the total aperture area.
3. Number of Vents/Linear Feet Installed: Indicate how many vents, or how many linear feet of this type are installed in the attic(s).
4. Total NFA Per Vent Type: The sum of values in column 02 for each Type of Vent used.

E. Required Vent Area

Table E. sets out the minimum required net free area (NFA) of total vents (upper plus lower), and the required NFA of upper vents. All values are calculated based on the inputs in Tables B, C, and D.
A minimum ratio between upper vents and lower vents must be achieved—the exception to R806.2 of the California Building Code (CBC) Title 24, Part2, Vol.2.5, states if the net free ventilating area is less than 1:150, then the upper ventilation must be at least 40% and no more than 50%. Part 2 contains additional requirements that must be met if the area is less than 1:150.

F. Radiant Barrier – Additional Requirements

Table F. lists additional requirements for Radiant Barriers.

G. Attic Ventilation – Additional Requirements

Table G. lists additional requirements for Lower Vents, Upper Vents, and Vent Area.

H. Roofing Products (Cool Roof) Installation Information

1. Tag/ID: A label (if any) from the plans, such as R1.
2. Roof Pitch: Indicate whether the roof pitch is <2:12 or ≥2:12
3. Cool Roof Rating Council (CRRC) Product ID Number: If a cool roof is installed, obtain the Product ID Number from the Cool Roof Rating Council's (CRRC) product packaging label or rated products directory (https://coolroofs.org/directory/roof).
4. Product Type: Using the drop down menu, indicate the product type being used (e.g., asphalt shingles, clay tiles, etc.).
5. Cool Roof Rating Council (CRRC) Listed Aged Solar Reflectance: State whether the 3-year Aged Solar Reflectance value of the product used is listed on the CRRC product packaging label or rated products directory—Yes or No.
6. Installed Initial Solar Reflectance: Enter the Initial Solar Reflectance value of the product used; obtained from the CRRC product packaging label or rated products directory.
7. Installed Aged Solar Reflectance: Enter the Aged Solar Reflectance value of the product used; obtained from the Cool Roof Rating Council (CRRC) product packaging label or label or rated product directory.

NOTE: If the 3-year aged value is not available then use the equation in Section 110.8(i)2 of the Energy Standards to calculate the 3-year Aged Solar Reflectance. One can also use the "Calculated

Aged Solar Reflectance" from the Solar Reflectance Index (SRI) Calculation Worksheet" available on the California Energy Commission's website.

8. Installed Thermal Emittance: Enter the Thermal Emittance value of the product used; obtained from the CRRC product packaging label or rated products directory. This can be either the initial or aged value.
9. Installed SRI: If applicable, obtain the value of the product used from the CRRC rated products directory, or the "Solar Reflectance Index (SRI) Calculation Worksheet" available at the California Energy Commission's website.
10. Proposed Aged Solar Reflectance: Report the Proposed Aged Solar Reflectance value from the CF1R.
11. Proposed Thermal Emittance: Report the Proposed Thermal Emittance value from the CF1R.
12. Proposed SRI: Report the Proposed SRI value if applicable, from the CF1R-NCB, -ADD, or -ALT-01.

I. Roofing Products (Cool Roof) – Additional Requirements

This section contains additional requirements for Roofing Products. Other exceptions apply for additions and/or alterations.