Prescriptive Certificate of Compliance:		CF-1R ADD
Residential *Additions*		**(Page 1 of 5)**
Site Address:	**Enforcement Agency:**	**Date:**

General Information		
Project Name	Climate Zone #	# of Stories
Building Type ☐ Single Family ☐ Multi Family	Circle the Front Orientation: N, E, S, W or Degrees _____	
Conditioned Floor Area of Addition (CFA):	**New Addition Size:** ☐ Less than or equal to 100 ft^2 ☐ Less than or equal to 1000 ft^2 *(Do not use this form for additions greater than 1000 ft^2)*	

NOTE: For Alterations to an existing home, submit a completed CF-1R-ALT Form.
Exception: Existing HVAC systems that are replaced or altered to serve the addition may be included on the CF-1R -ADD Form.

Prescriptive Envelope Requirements for Additions

Option 1: Use Option 1for standard wood and assemblies meeting the **Cavity R-value only**. For all other use Option 2.

- *For 100 ft^2 additions; the Proposed values must be equal or greater than the Standard column or when indicated when using Package D, "Pkg D". Enter all values in the Proposed Columns.*
- *For less than 1,000 ft^2 additions must comply with "Pkg D" requirements unless indicated in the Standard Column. To meet "Pkg D" minimum energy compliance requirements, see RCM Appendix B, Table 151-C. Or §151(b) in the RCM. Enter all values in the Proposed Columns.*

Size of Addition	**100 ft^2 or less**					**Less than 1,000 ft^2**				
Component	**Standard**		**Proposed**		**Comment**	**Standard**		**Proposed**		**Comment**
Ceiling Insulation	R-19				Minimum	Pkg D				Table 151-C
Wall Insulation	R-13				Minimum	R-13				Minimum
Floor Insulation	R-13				Minimum	Pkg D				Table 151-C
Fenestration	**U-factor**	**SHGC**	**U-factor**	**SHGC**	Enter Proposed values then **Skip Over** *To Roofing Products* Below	**U-factor**	**SHGC**	**U-factor**	**SHGC**	**Fill out** *Fenestration Proposed Areas* Below
	0.40	Pkg D				0.40	Pkg D			
Maximum Glazing Area	50 ft^2		ft^2			**Package D (20% of CFA) + Glass Removed**		ft^2		**Fill out** *Additional Allowed Fenestration Areas* Below
Radiant Barrier	N/A					Pkg D		Table 151-C		
Roofing	Pkg D		See Roofing Products Below			Pkg D		See Roofing Products Below		

Opaque Surface Details

For the furred portioned of Mass Walls see Furring Strips Construction Table below.

A	B	C	D	E	F	G	H	I	J
Proposed See Note				**Standard**	Values From JA4 Table				
Tag/ ID[1]	Assembly Name or Type[1]	Framing Material and Size[2]	Thickness, Spacing, or Other[3]	U-factor[4]	JA4 Table Number[5]	Framed Cavity R-value[6]	Continuous Insulation R-Value[7]	JA4 Assembly Cell Value[8]	Proposed Assembly U-factor[9]

Note: For furred assemblies, accounting for Continuous Insulation R-value, see Page JA4-3 and Equation 4-1. For calculating furred walls use the Mass and Furring Construction table below.

1. *For Tag/ID indicate the identification name that matches the building plans.*
2. *Indicate the Assembly Name or type: Roof/Ceiling, Walls, Floors, Slabs, Crawl Space, Doors and etc…Indicate the Frame type and Size: For Wood, Metal, Metal Buildings, Mass, enter 2x4, 2x6, or etc… see JA4 for other possible frame type assemblies.*
3. *Enter the thickness for mass in inches or Spacing between framing members enter; 16"or 24"OC; or Other for all other assembly description such as Concrete Sandwich Panel, Spandrel Panel, Logs, Straw Bale Panel and etc….*
4. *Based on the Climate Zone; enter the Standard U-factor from Table 151- C for each different assembly Name or type.*
5. *Enter the Table number that closely resembles the proposed assembly.*
6. *Enter the R-value that is being installed in the wall cavity or between the framing; otherwise, enter "0".*
7. *Enter the Continuous Insulation R-value for the proposed assembly; otherwise, enter "0".*
8. *Enter the row and column of the U-factor value based on Column F Table Number and enter the Assembly U-factor in Column J.*
9. *The **Proposed** Assembly U-factor, Column J, must be equal to or less than the **Standard** U-factor in Column E to comply.*

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Furring Strips Construction Table for Mass Walls Only

A	B	C	D	E	F	G	H	I	J	K	L	M
Proposed Properties of Masonry and Concrete Walls From Reference Joint Appendix Table 4.3.5, 4.3.6, 4.3.7					**Added Interior or Exterior Insulation in Furring Space from Reference Joint Appendix Table 4.3.13**							
Mass Thickness[1]	Assembly Name or Type[2]	JA4 Table Number[3]	JA4 -Mass Cell Value[4]	Mass U-Factor[5]	Interior or Exterior of Insulation Layer	Frame Thickness	Frame Type Wood or Metal	Furring Cavity R-value[3]	JA4 -Mass Cell Value[4]	Effective R-value[5]	Final Assembly U-factor[6,7]	Comment

1. Indicate the Mass Thickness from Reference Joint Appendix JA.
2. Indicate the Assembly Name or type: Roof/Ceiling, Walls, Floors, Slabs, Crawl Space, Doors and etc…Indicate the Frame type and Size: For Wood, Metal, Metal Buildings, Mass, enter 2x4, 2x6, or etc… see JA4 for other possible frame type assemblies.
3. Enter the Table number that closely resembles the proposed assembly.
4. Enter the row and column of the U-factor value.
5. Enter the Effective R-value listed in the JA4 Table Number.
6. The Final Assembly is calculated by using Equation 4-1 or Equation 4-4 of the Reference Joint Appendix JA4. Enter the value in Column L.
7. Insert the Final Assembly U-factor value back on to the Opaque Surface Details table in Column J.

FENESTRATION PROPOSED AREAS

Fenestration Type and Frame (Window, Glass Door or Skylight)	Orientation (North, East, South, West)	PropsedArea[1] (ft^2)	Maximum U-factor[2, 3]	Maximum SHGC[2, 3, 4]	NFRC or Default Values[5]
	Total				

1. Fenestration area is the area of total glazed product (i.e. glass plus frame). Exception: When a door is less than 50% glass, the fenestration area may be the glass area plus a "2 inch frame" around the glass.
2. Enter value from Component Package D Requirements in Table 151-C.
3. Actual fenestration products installed and as indicated in CF-6R-ENV Form shall be equivalent to or have a lower U-factor and/or a lower SHGC value than that specified on the CF-1R ADD Form.
4. Submit a completed WS-3R Form if a reduced SHGC is calculated with exterior shading.
5. If applicable at this stage enter "NFRC" for NFRC Certified windows or CEC "Default" values found in Table 116-A or B.

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ADDITION ALLOWED FENESTRATION AREAS

	A	B	C	D	E		F
	CFA of Addition ft^2	Allowed % of CFA	Allowed Area (A x B)	Area Removed[2] ft^2	Total Area Allowed (C + D)		Proposed Area[3, 4] (Table Above)
Total Fenestration Area						≥	
West Fenestration Area[1] (Required In CZ's 2, 4 & 7 -15)		.05				≥	

1. West Fenestration Area includes west-sloping skylights and any skylights with a pitch less than 1:12.
2. West facing glazing area removed cannot be "counted" twice." In order to distribute the west glazing area removed to the other orientations, input the west glazing area removed in the Total Fenestration Area row, column D.
3. Include the Proposed Area of the West facing fenestration in both Area columns below.
4. To meet compliance, the Proposed Area must be less than or equal to the Total Allowed Area for BOTH the Total and West Fenestration Areas.

ROOFING PRODUCTS (COOL ROOFS) *§151(f)12*

Check applicable box below if the roof addition is exempt from the roofing product "Cool Roof" requirements. Note: If any one of the boxes are checked below, the Aged Solar Reflectance and Thermal Emittance requirements for roofing products in §118(i) are not applicable. Do not fill table below.

☐ Roofing compliance Not Required in Climate Zones 1-12, 14, and 16 with a Low Slope. Less or 2:12 pitch.
☐ Roofing compliance Not Required in Climate Zones 1 through 9 and 16 with a Low-Sloped. Roofs pitch greater than 2:12 and product weight less than $5 lb/ft^2$.

☐ Roofing area covered by building integrated; photovoltaic panels and solar thermal panels are exempt from the above Cool Roof criteria
☐ Roof constructions that have thermal mass over the roof membrane with at least $25 lb/ft^2$ is exempt from the above Cool Roof criteria.

Note: If no CRRC-1 label is available, this compliance method cannot be used, use the Performance Approach to show compliance, otherwise, check the applicable box below if Exempt from the Roofing Products "Cool Roof" Requirement:

CRRC Product ID Number[1]	Roof Slope ≤ 2:12	Roof Slope > 2:12	Product Weight < $5 lb/ft^2$	Product Weight ≥ $5 lb/ft^2$	Product Type[2]	Aged Solar Reflectance[3,4]		Thermal Emittance	SRI[5]
	☐	☐	☐	☐		☐[4]			
	☐	☐	☐	☐		☐[4]			
	☐	☐	☐	☐		☐[4]			
	☐	☐	☐	☐		☐[4]			

1. The CRRC Product ID Number can be obtained from the Cool Roof Rating Council's Rated Product Directory at www.coolroofs.org/products/search.php
2. Indicate the type of product is being used for the roof top, i.e. single-ply roof, asphalt roof, metal roof, etc.
3. If the Aged Reflectance is not available in the Cool Roof Rating Council's Rated Product Directory then use the Initial Reflectance value from the same directory and use the equation $(0.2+0.7(\rho_{initial} - 0.2)$ to obtain a calculated aged value. Where ρ is the Initial Solar Reflectance.
4. Check box if the Aged Reflectance is a calculated value using the equation above.
5. Calculate the SRI value by using the SRI- Worksheet at http://www.energy.ca.gov/title24/ and enter the resulting value in the SRI Column above and attach acopy of the SRI- Worksheet to the CF-1R.

To apply **Liquid Field Applied Coatings,** the coating must be applied across the entire roof surface and meet the dry mil thickness or coverage recommended by the coatings manufacturer and meet minimum performance requirements listed in §118(i)4. Select the applicable coating:

☐ Aluminum-Pigmented Asphalt Roof Coating	☐ Cement-Based Roof Coating	☐ Other _____

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HVAC SYSTEMS - HEATING

Heating Equipment Type and Capacity[1, 2, 3]	Minimum Efficiency (AFUE or HSPF)	Distribution Type and Location[4]	Duct or Piping Insulation R-Value	Thermostat Type	Configuration (Central, Split, Space, Package or Hydronic)

1. Indicate Heating Type (Central Furnace, Wall Furnace, Heat pump, Boiler, Electric Resistance, etc.)
2. Electric resistance heating is allowed only in Component Package C, or except where electric heating is supplemental (i.e., if total capacity ≤ 2 KW or 7,000 Btu/hr electric heating is controlled by a time-limiting device not exceeding 30 minutes). See §151(b)3 exception.
3. Refer to the HERS Verification section on Pages 3 and 4 of the CF-1R-ADD Form for additional requirements and check applicable boxes.
4. Indicate Type or Location (Ducts, Hydronic in Floor, Radiators, etc.)

HVAC SYSTEMS - COOLING

Cooling Equipment Type and Capacity[1,2]	Minimum Efficiency (SEER/EER or COP)	Distribution Type and Location[3]	Duct or Piping Insulation R-Value	Thermostat Type	Configuration (Central, Split, Space, Package or Hydronic)

1. Indicate Cooling Type (A/C, Heat pump, Evap. Cooling, etc).
2. Refer to the HERS Verification section on Pages 3 and 4 of the CF-1R-ADD Form for additional requirements and check applicable boxes.
3. Indicate Type or Location (Ducts, Hydronic in Floor, Radiators, etc.)

WATER HEATING

List water heaters and boilers for both domestic hot water (DHW) heaters and hydronic space heating. Individual dwelling DHW heaters must be gas or propane fired, and may not exceed 50 gallons. Hot water pipe insulation from the DHW heater to the kitchen(s) and on all underground hot water pipes is required in all component packages in all climate zones.

Water Heater Type/Fuel Type[1]	Distribution Type (Standard, Recirculating)[2]	Number In System	Tank Capacity (gal)	Energy Factor or Thermal Efficiency	External Tank Insulation R-Value[3]

1. Indicate Type (Storage Gas, Heat Pump, Instantaneous, etc.)
2. Recirculating systems serving multiple dwelling units shall meet the recirculation requirements of §150(n). The Prescriptive requirements do not allow the installation of a recirculating water heating system for single dwelling units.
3. The water heating tank and pipes shall be insulated to meet the requirements of §150(j).

SPECIAL FEATURES

The enforcement agency should pay special attention to the Special Features specified in this checklist below. These items may require written justification and documentation and special verification.

Radiant Barrier (Roof) ☐ **YES** ☐ **NO**
YES: Required in Climate Zones 2, 4, and 8-15 for additions larger than 100 ft^2.

Slab Edge (Perimeter) Insulation ☐ **YES** ☐ **NO**
YES: In Climate Zone 16 under Component Package D, R-7 insulation is required.

Heated Slab Insulation ☐ **YES** ☐ **NO**
YES: Slab edge insulation required for heated slabs in all Climate Zones. See details in Table 118-A of the standards.

Raised Slab Insulation ☐ **YES** ☐ **NO**
YES: In Climate Zones 1, 2, 11, 13, 14 & 16 R-8 insulation is required, and in Climate Zones 12 & 15 R-4 insulation is required under Component Package D.

Thermal Mass - To obtain Compliance Credit for the installation of thermal mass, use the Performance Approach.

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Site Address:	Enforcement Agency:	Date:

HERS VERIFICATION SUMMARY - The enforcement agency should pay special attention to the HERS Measures specified in this checklist below. A completed and signed CF-4R Form for all the measures specified shall be submitted to the building inspector before final inspection.

Duct Sealing & Testing *HERS verification is required for this measure.*

☐ **YES** ☐ **NO YES**: In all Climate Zones, if a new space-conditioning system (HVAC equipment and ducting) is installed to serve the addition alone, the ducts are to be sealed and tested per §151(f)10.

☐ **YES** ☐ **NO YES**: In Climate Zones 2 and 9-16, if more than 40 linear feet of new or replacement ducts are installed in unconditioned space to serve the addition, the ducts are to be sealed and tested per §152(b)1D.

☐ **EXCEPTION: Existing duct systems that are extended, which are constructed, insulated or sealed with asbestos.**

☐ **YES** ☐ **NO YES**: In Climate Zones 2 and 9-16, if the existing HVAC equipment is replaced (including replacement of the air handler, outdoor condensing unit of a split system, cooling or heating coil, or the furnace heat exchanger) and will serve the addition, the ducts are to be sealed and tested per §152(b)1E.

☐ **EXCEPTION: Duct systems that are documented to have been previously sealed confirmed through HERS verification in accordance with procedures in the Reference Residential Appendix RA3.**

☐ **EXCEPTION: Duct systems with less than 40 linear feet in unconditioned space.**

☐ **EXCEPTION: Existing duct systems constructed, insulated or sealed with asbestos.**

Refrigerant Charge - Split System *HERS verification is required for this measure.*

☐ **YES** ☐ **NO YES**: In Climate Zones 2 and 8-15, if a newly ducted split A/C or heat pump is installed to serve the addition alone, a refrigerant charge measurement shall be verified per §151(f)7A.

☐ **YES** ☐ **NO YES**: In Climate Zones 2 and 8-15, if the existing HVAC equipment is replaced (including replacement of the air handler, outdoor condensing unit of a split system, cooling or heating coil, or the furnace heat exchanger) and will serve the addition, a refrigerant charge measurement shall be verified per §152(b)1F.

Central Fan Integrated Ventilation System – Airflow and Fan Watt Draw - do not apply for additions 1,000 ft^2 or less.

Ducted Split Systems - Air Conditioners and Heat Pumps: Airflow and Fan Watt Draw *HERS verification is required.*

☐ **YES** ☐ **NO YES**: In Climate Zones 10 through 15, if a new space-conditioning system (HVAC equipment and ducting) is installed to serve the addition alone, the airflow and fan watt draw shall be verified per §151(f)7B.

☐ **YES** ☐ **NO YES**: In Climate Zones 10 through 15, if the existing space-conditioning system (HVAC equipment and ducting) is replaced and will serve the addition, the airflow and fan watt draw shall be verified per §152(b)1F.

Documentation Author's Declaration Statement

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

Name:	Signature:
Company:	Date:
Address:	If Applicable ☐ CEA or ☐ CEPE (Certification #):
City/State/Zip:	Phone:

Responsible Building Designer's Declaration Statement

- I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the building design identified on this Certificate of Compliance.
- I certify that the energy features and performance specifications for the building design identified on this Certificate of Compliance conform to the requirements of Title 24, Parts 1 and 6 of the California Code of Regulations.
- The building design features identified on this Certificate of Compliance are consistent with the information provided to document this building design on the other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.

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

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

Registration Number: _____ *Registration Date/Time:* _____ *HERS Provider:* _____