

Mandatory Measures Summary

MF-1R

Residential

(Page 1 of 3)

Site Address:

Enforcement Agency:

Date:

NOTE: Low-rise residential buildings subject to the Standards must comply with all applicable mandatory measures listed, regardless of the compliance approach used. More stringent energy measures listed on the Certificate of Compliance (CF-1R, CF-1R-ADD, or CF-1R-ALT Form) shall supersede the items marked with an asterisk () below. This Mandatory Measures Summary shall be incorporated into the permit documents and the applicable features shall be considered by all parties as minimum component performance specifications whether they are shown elsewhere in the documents or in this summary. Submit all applicable sections of the MF-1R Form with plans.*

DESCRIPTION

Building Envelope Measures:

§116(a)1: Doors and windows between conditioned and unconditioned spaces are manufactured to limit air leakage.

§116(a)4: Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a).

§117: Exterior doors and windows are weather-stripped; all joints and penetrations are caulked and sealed.

§118(a): Insulation specified or installed meets Standards for Insulating Material. Indicate type and include on CF-6R Form.

§118(i): The thermal emittance and solar reflectance values of the cool roofing material meets the requirements of §118(i) when the installation of a Cool Roof is specified on the CF-1R Form.

*§150(a): Minimum R-19 insulation in wood-frame ceiling or equivalent U-factor.

§150(b): Loose fill insulation shall conform with manufacturer's installed design labeled R-Value.

*§150(c): Minimum R-13 insulation in wood-frame wall or equivalent U-factor.

*§150(d): Minimum R-13 insulation in raised wood-frame floor or equivalent U-factor.

§150(f): Air retarding wrap is tested, labeled, and installed according to ASTM E1677-95(2000) when specified on the CF-1R Form.

§150(g): Mandatory Vapor barrier installed in Climate Zones 14 or 16.

§150(i): Water absorption rate for slab edge insulation material alone without facings is no greater than 0.3%; water vapor permeance rate is no greater than 2.0 perm/inch and shall be protected from physical damage and UV light deterioration.

Fireplaces, Decorative Gas Appliances and Gas Log Measures:

§150(e)1A: Masonry or factory-built fireplaces have a closable metal or glass door covering the entire opening of the firebox.

§150(e)1B: Masonry or factory-built fireplaces have a combustion outside air intake, which is at least six square inches in area and is equipped with a readily accessible, operable, and tight-fitting damper and or a combustion-air control device.

§150(e)2: Continuous burning pilot lights and the use of indoor air for cooling a firebox jacket, when that indoor air is vented to the outside of the building, are prohibited.

Space Conditioning, Water Heating and Plumbing System Measures:

§110-§113: HVAC equipment, water heaters, showerheads, faucets and all other regulated appliances are certified by the Energy Commission.

§113(c)5: Water heating recirculation loops serving multiple dwelling units and High-Rise residential occupancies meet the air release valve, backflow prevention, pump isolation valve, and recirculation loop connection requirements of §113(c)5.

§115: Continuously burning pilot lights are prohibited for natural gas: fan-type central furnaces, household cooking appliances (appliances with an electrical supply voltage connection with pilot lights that consume less than 150 Btu/hr are exempt), and pool and spa heaters.

§150(h): Heating and/or cooling loads are calculated in accordance with ASHRAE, SMACNA or ACCA.

§150(i): Heating systems are equipped with thermostats that meet the setback requirements of Section 112(c).

§150(j)1A: Storage gas water heaters rated with an Energy Factor no greater than the federal minimal standard are externally wrapped with insulation having an installed thermal resistance of R-12 or greater.

§150(j)1B: Unfired storage tanks, such as storage tanks or backup tanks for solar water-heating system, or other indirect hot water tanks have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.

§150(j)2: First 5 feet of hot and cold water pipes closest to water heater tank, non-recirculating systems, and entire length of recirculating sections of hot water pipes are insulated per Standards Table 150-B.

§150(j)2: Cooling system piping (suction, chilled water, or brine lines), and piping insulated between heating source and indirect hot water tank shall be insulated to Table 150-B and Equation 150-A.

§150(j)2: Pipe insulation for steam hydronic heating systems or hot water systems >15 psi, meets the requirements of Standards Table 123-A.

§150(j)3A: Insulation is protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.

§150(j)3A: Insulation for chilled water piping and refrigerant suction lines includes a vapor retardant or is enclosed entirely in conditioned space.

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§150(j)4: Solar water-heating systems and/or collectors are certified by the Solar Rating and Certification Corporation.

Ducts and Fans Measures:

§150(m)1: All air-distribution system ducts and plenums installed, are sealed and insulated to meet the requirements of CMC Sections 601, 602, 603, 604, 605 and Standard 6-5; supply-air and return-air ducts and plenums are insulated to a minimum installed level of R-4.2 or enclosed entirely in conditioned space. Openings shall be sealed with mastic, tape or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and either mesh or tape shall be used.

§150(m)1: Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms shall not be compressed to cause reductions in the cross-sectional area of the ducts.

§150(m)2D: Joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.

§150(m)7: Exhaust fan systems have back draft or automatic dampers.

§150(m)8: Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually operated dampers.

§150(m)9: Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Cellular foam insulation shall be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material.

§150(m)10: Flexible ducts cannot have porous inner cores.

§150(o): All dwelling units shall meet the requirements of ANSI/ASHRAE Standard 62.2-2007 Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. Window operation is not a permissible method of providing the Whole Building Ventilation required in Section 4 of that Standard.

Pool and Spa Heating Systems and Equipment Measures:

§114(a): Any pool or spa heating system shall be certified to have: a thermal efficiency that complies with the Appliance Efficiency Regulations; an on-off switch mounted outside of the heater; a permanent weatherproof plate or card with operating instructions; and shall not use electric resistance heating or a pilot light.

§114(b)1: Any pool or spa heating equipment shall be installed with at least 36" of pipe between filter and heater, or dedicated suction and return lines, or built-up connections for future solar heating.

§114(b)2: Outdoor pools or spas that have a heat pump or gas heater shall have a cover.

§114(b)3: Pools shall have directional inlets that adequately mix the pool water, and a time switch that will allow all pumps to be set or programmed to run only during off-peak electric demand periods.

§150(p): Residential pool systems or equipment meet the pump sizing, flow rate, piping, filters, and valve requirements of §150(p).

Residential Lighting Measures:

§150(k)1: High efficacy luminaires or LED Light Engine with Integral Heat Sink has an efficacy that is no lower than the efficacies contained in Table 150-C and is not a low efficacy luminaire as specified by §150(k)2.

§150(k)3: The wattage of permanently installed luminaires shall be determined as specified by §130(d).

§150(k)4: Ballasts for fluorescent lamps rated 13 Watts or greater shall be electronic and shall have an output frequency no less than 20 kHz.

§150(k)5: Permanently installed night lights and night lights integral to a permanently installed luminaire or exhaust fan shall contain only high efficacy lamps meeting the minimum efficacies contained in Table 150-C and shall not contain a line-voltage socket or line-voltage lamp holder; OR shall be rated to consume no more than five watts of power as determined by §130(d), and shall not contain a medium screw-base socket.

§150(k)6: Lighting integral to exhaust fans, in rooms other than kitchens, shall meet the applicable requirements of §150(k).

§150(k)7: All switching devices and controls shall meet the requirements of §150(k)7.

§150(k)8: A minimum of 50 percent of the total rated wattage of permanently installed lighting in kitchens shall be high efficacy.
EXCEPTION: Up to 50 watts for dwelling units less than or equal to 2,500 ft² or 100 watts for dwelling units larger than 2,500 ft² may be exempt from the 50% high efficacy requirement when: all low efficacy luminaires in the kitchen are controlled by a manual on occupant sensor, dimmer, energy management system (EMCS), or a multi-scene programmable control system; and all permanently installed luminaries in garages, laundry rooms, closets greater than 70 square feet, and utility rooms are high efficacy and controlled by a manual-on occupant sensor.

§150(k)9: Permanently installed lighting that is internal to cabinets shall use no more than 20 watts of power per linear foot of illuminated cabinet.

§150(k)10: Permanently installed luminaires in bathrooms, attached and detached garages, laundry rooms, closets and utility rooms shall be high efficacy.

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EXCEPTION 1: Permanently installed low efficacy luminaires shall be allowed provided that they are controlled by a manual-on occupant sensor certified to comply with the applicable requirements of §119.

EXCEPTION 2: Permanently installed low efficacy luminaires in closets less than 70 square feet are not required to be controlled by a manual-on occupant sensor.

§150(k)11: Permanently installed luminaires located in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, closets, and utility rooms shall be high efficacy luminaires.

EXCEPTION 1: Permanently installed low efficacy luminaires shall be allowed provided they are controlled by either a dimmer switch that complies with the applicable requirements of §119, or by a manual-on occupant sensor that complies with the applicable requirements of §119.

EXCEPTION 2: Lighting in detached storage building less than 1000 square feet located on a residential site is not required to comply with §150(k)11.

§150(k)12: Luminaires recessed into insulated ceilings shall be listed for zero clearance insulation contact (IC) by Underwriters Laboratories or other nationally recognized testing/rating laboratory; and have a label that certifies the luminaire is airtight with air leakage less than 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283; and be sealed with a gasket or caulk between the luminaire housing and ceiling.

§150(k)13: Luminaires providing outdoor lighting, including lighting for private patios in low-rise residential buildings with four or more dwelling units, entrances, balconies, and porches, which are permanently mounted to a residential building or to other buildings on the same lot shall be high efficacy.

EXCEPTION 1: Permanently installed outdoor low efficacy luminaires shall be allowed provided that they are controlled by a manual on/off switch, a motion sensor not having an override or bypass switch that disables the motion sensor, and one of the following controls: a photocontrol not having an override or bypass switch that disables the photocontrol; OR an astronomical time clock not having an override or bypass switch that disables the astronomical time clock; OR an energy management control system (EMCS) not having an override or bypass switch that allows the luminaire to be always on

EXCEPTION 2: Outdoor luminaires used to comply with Exception 1 to §150(k)13 may be controlled by a temporary override switch which bypasses the motion sensing function provided that the motion sensor is automatically reactivated within six hours.

EXCEPTION 3: Permanently installed luminaires in or around swimming pool, water features, or other location subject to Article 680 of the California Electric Code need not be high efficacy luminaires.

§150(k)14: Internally illuminated address signs shall comply with Section 148; OR not contain a screw-base socket, and consume no more than five watts of power as determined according to §130(d).

§150(k)15: Lighting for parking lots and carports with a total of for 8 or more vehicles per site shall comply with the applicable requirements in Sections 130, 132, 134, and 147. Lighting for parking garages for 8 or more vehicles shall comply with the applicable requirements of Sections 130, 131, 134, and 146

§150(k)16: Permanently installed lighting in the enclosed, non-dwelling spaces of low-rise residential buildings with four or more dwelling units shall be high efficacy luminaires.

EXCEPTION: Permanently installed low efficacy luminaires shall be allowed provided that they are controlled by an occupant sensor(s) certified to comply with the applicable requirements of §119.

Prescriptive Certificate of Compliance: Residential		CF-1R
Newly Constructed Buildings and Additions Greater Than 1,000 ft²		(Page 1 of 5)
Project Name:	Climate Zone #	# of Stories

General Information		
Site Address:	Enforcement Agency:	Date:
Building Type <input type="checkbox"/> Single Family <input type="checkbox"/> Multi Family	Conditioned Floor Area ¹ (CFA):	
Circle the Front Orientation: N, E, S, W, or Degrees _____	Project Type: <input type="checkbox"/> New Building Construction <input type="checkbox"/> New Addition ¹ greater than 1,000 ft ² <i>1. Additions greater than 1,000 ft² must comply with Component Package D.</i>	
Component Package: (Check one) C _____ D _____ E (_____ E Alternative) in Climate zone 1 and 16 only. See footnotes to Table 151-D for alternative optional requirements.		

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 <small>See Note</small>				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-B, C or D 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.

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						Final Assembly U-factor ^{6,7}	Comment
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		

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.

Prescriptive Certificate of Compliance: Residential		CF-1R
Newly Constructed Buildings and Additions Greater Than 1,000 ft²		(Page 2 of 5)
Project Name:	Climate Zone #	# of Stories

FENESTRATION: PROPOSED AREAS					
Fenestration Type and Frame (Window, Glass Door or Skylight)	Orientation (North, East, South, West)	Proposed Area ¹ (ft ²)	Maximum Allowed U-factor ^{2,3}	Maximum Allowed SHGC ^{2,3,4}	NFRC or Default Values ⁵
<i>Total</i>					

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" "frame" around the glass.

2. Enter value from Component Package Requirements from either Table 151-B, 151-C, or 151-D.

3. Actual fenestration efficiencies installed shall be indicated on the installation form, CF-6R-ENV. The efficiencies should be equivalent to or less than that listed on the CF-1R Form Page 1. Otherwise, revise the CF-1R and resubmit for plan check review.

4. Submit a completed WS-3R Form if a reduced SHGC is calculated with exterior shading or overhangs.

5. If applicable at this stage enter "NFRC" Certified windows or are CEC "Default" values found in Table 116-A or B.

FENESTRATION PROPOSED AREA CALCULATION				
	CFA ft ²	Allowed % of CFA	Allowed Area (CFA x Allowed %)	Total Proposed Area (From Table Above)
Total Fenestration Area ¹				
West Fenestration Area ² (Required only in Climate Zones 2, 4 & 7 -15)		.05		
Total Area ³				
			≥	

1. For Component Package C, see Table 151-B for Climate Zone Maximum Total Area Allowance. Enter 20% for all other Component Packages.

2. The Proposed West Fenestration Area includes west-sloping skylights and any skylights with a pitch less than 1:12.

3. To meet energy compliance the Total Proposed Area must be less than or equal to the Allowed Area.

Prescriptive Certificate of Compliance: Residential		CF-1R
<i>Newly Constructed Buildings and Additions Greater Than 1,000 ft²</i>		(Page 3 of 5)
Project Name:	Climate Zone #	# of Stories

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

Check applicable box below if the newly installed roof is exempted 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.

- Cool Roofs Not Required in Climate Zones 1-12, 14, and 16 with a Low Sloped. Less or 2:12 pitch.
- Cool Roofs Not Required in Climate Zones 1 through 9 and 16 with a Steep-Sloped Roofs (pitch greater than 2:12) and product unit weight less than 5lb/ft².

Other Exceptions

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/ft² 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		Product Weight		Product Type ²	Aged Solar Reflectance ^{3,4}		Thermal Emittance	SRI ⁵
	≤ 2:12	> 2:12	< 5lb/ft ²	≥ 5lb/ft ²					
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>			

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 a copy 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 _____

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, Hydronic, 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 Form for additional requirements and check applicable boxes.
4. Indicate Type or Location (Ducts, Hydronic in Floor, Radiators, etc.)

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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 Type (A/C, Heat pump, Evaporative Cooling, etc)
2. Refer to the HERS Verification section on Pages 3 and 4 of the CF-1R 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 use recirculation pumps. 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 in Component Packages C, D and E.

Slab Edge (Perimeter) Insulation YES NO
 YES: In all Climate Zones using Component Package C, and in Climate Zone 16 under Component Packages D and E, R-7 insulation is required.

Heated Slab Insulation YES NO
 YES: Slab edge insulation required for heated slabs in all Component Packages 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 Packages D and E. Raised slab insulation is not required in Component Package C.

Thermal Mass YES NO
 YES: In Component Package C for all Climate Zones, a Minimum Interior Mass Capacity (IMC) must be achieved per Table 151-A of the standards. If Yes, submit a completed WS-1R Form.

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<i>Newly Constructed Buildings and Additions Greater Than 1,000 ft²</i>		(Page 5 of 5)
Project Name:	Climate Zone #	# of Stories

<p>HERS VERIFICATION SUMMARY <i>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.</i></p>		
<p>Duct Sealing & Testing <input type="checkbox"/> YES <input type="checkbox"/> NO YES: New ducted systems are to be sealed and duct leakage shall be less than 6% per §151(f)10 in all Component Packages in all Climate Zones. <i>HERS verification is required for this measure.</i></p>		
<p>Refrigerant Charge - Split System <input type="checkbox"/> YES <input type="checkbox"/> NO YES: In Climate Zones 2 and 8-15 in all Component Packages, when a newly ducted split A/C or heat pump is installed, a refrigerant charge measurement shall be verified per §151(f)7A. <i>HERS verification is required for this measure.</i></p>		
<p>Central Forced Air Handlers: Integrated Ventilation System Watt Draw <input type="checkbox"/> YES <input type="checkbox"/> NO YES: In all Component Packages and in all Climate Zones, when a central fan integrated ventilation system is installed to meet the ventilation requirements of §150(o), the central forced air system fans must draw less than 0.58 watts per CFM per §151(f)11. <i>HERS verification is required for this measure.</i></p>		
<p>Ducted Split Central Air Conditioners and Heat Pumps: Airflow and Watt Draw <input type="checkbox"/> YES <input type="checkbox"/> NO YES: In all Component Packages in Climate Zones 10 through 15, when a newly ducted split A/C or heat pump system is installed, the airflow and fan watt draw shall be verified per §151(f)7B. <i>HERS verification is required for this measure.</i></p>		

Documentation Author's Declaration Statement		
<ul style="list-style-type: none"> • I certify that this Certificate of Compliance documentation is accurate and complete. 		
Name:	Signature:	
Company:		Date:
Address:	If Applicable <input type="checkbox"/> CEA or <input type="checkbox"/> CEPE (Certification #):	
City/State/Zip:	Phone:	

Responsible Building Designer's Declaration Statement		
<ul style="list-style-type: none"> • 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.

Envelope – Insulation; Roofing; Fenestration

Site Address: _____

Enforcement Agency: _____

Permit Number: _____

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 with check boxes require to be checked to ensure the mandatory measures have been met.

Description of Insulation

1. RAISED FLOOR

Material: _____

Brand Name: _____

Thickness (inches): _____

Thermal Resistance (R-Value): _____

§150(d): Minimum R-13 insulation in raised wood-frame floor or equivalent U-factor.

2. SLAB FLOOR/PERIMETER

Material: _____

Brand Name: _____

Thickness (inches): _____

Thermal Resistance (R-Value): _____

Perimeter Insulation Depth (inches): _____

§150(l): Water absorption rate for the insulation material alone without facings is no greater than 0.3%; water vapor permeance rate is no greater than 2.0 perm/inch and shall be protected from physical damage and UV light deterioration.

3. EXTERIOR WALL

a. Insulation Type (e.x. Batt, Loose Fill, Spray Foam)

a. Thermal Resistance (R-Value): _____

b. . Insulation Type (e.x. Batt, Loose Fill, Spray Foam)

b. Thermal Resistance (R-Value): _____

Brand: _____

Spray/Loose fill) Installed Actual Thickness (inches): _____

Spray/Loose fill)
Contractor's min installed weight/ft² _____ lb

Manufacturer's installed weight per square foot to achieve Thermal Resistance (R-Value)

§150(c): Minimum R-13 insulation in wood-frame wall or equivalent U-factor.

Exterior Foam Sheathing (rigid Insulation)

Material: _____

Brand Name: _____

Thickness (inches) : _____

Thermal Resistance (R-Value) : _____

4. FOUNDATION WALL

Material: _____

Brand Name: _____

Thickness (inches): _____

Thermal Resistance (R-Value): _____

5. CEILING

Batt or Blanket Type: _____

Brand Name: _____

Loose Fill Type: _____

Thermal Resistance (R-Value): _____

Spray Foam Type: _____

Brand Name: _____

Installed Actual Thickness (inches): _____

Contractor's min installed weight/ft² _____ lb

Manufacturer's installed weight per square foot to achieve Thermal Resistance (R-Value):

§150(a): Minimum R-19 insulation in wood-frame ceiling or equivalent U-factor.

6. ATTIC ROOF INSULATION AND/OR ATTIC RADIANT BARRIER

Material: _____

Brand Name: _____

Material: _____

Brand Name: _____

Thickness (inches): _____

Thermal Resistance (R-Value): _____

§118(a): Insulation installed meets Standards for Insulating Material.

§150(g): Mandatory Vapor barrier installed in Climate Zones 14 or 16.

INSTALLATION CERTIFICATE

CF-6R-ENV-01

Envelope – Insulation; Roofing; Fenestration

(Page 2 of 3)

Site Address:	Enforcement Agency:	Permit Number:
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Description of Roofing Products

CRRC Product ID Number ¹	Manufacturer Information	Brand/Model	Product Type	Roof Area	Roof Slope	Product Weight ²	Initial Solar Reflectance	Aged Solar Reflectance ⁴	Thermal Emittance
								<input type="checkbox"/> ³	
								<input type="checkbox"/> ³	
								<input type="checkbox"/> ³	

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. The weight in lbs per square feet of the roofing product being installed.
3. Check box if the Aged Reflectance is a calculated value using the equation below, footnote 4.
4. 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 directory and use the equation $(0.2 + 0.7(\rho_{initial} - 0.2))$ to obtain a calculated aged value.

CHECK APPLICABLE BOX BELOW IF EXEMPT FROM THE ROOFING PRODUCT "COOL ROOF" REQUIREMENT:

The roof area covered by building integrated photovoltaic panels and building integrated solar thermal panels are exempt from the above Cool Roof criteria.

Roof constructions that have thermal mass over the roof membrane with a weight of at least 25 lb/ft² is exempted from the above Cool Roof criteria.

To apply Liquid Field Applied Coatings, the coating must be applied with a minimum dry mil thickness of 20 mils across the entire roof surface and meet minimum performance requirements listed in §118(i)3 and Table 118-C. Select the applicable coating

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

CRRC-1 Label Attached to CF-6R
 (Note if no CRRC-1 label is available, this compliance method cannot be used and another method is required to meet compliance).

FENESTRATION/GLAZING

Item	Manufacturer/Brand Name (GROUP LIKE PRODUCTS)	Product U-factor ¹	Product SHGC ¹	# of Panes	NFRC Certified ^{1,2}	Total Quantity of Like Product (Optional)	Area ft ²	Add. Exterior Shading Dev. or Overhang	Comments/ Location/ Special Features
1									
2									
3									
4									
5									
6									
7									
8									

1. Use values from a fenestration product's NFRC Certified Label. For fenestration products without an NFRC label, use the default values from Section 116, Table 116-A and 116-B of the 2008 Energy Efficiency Standards.
2. NFRC Label Certificates shall not be removed until the building inspector has verified the efficiency. Enter Yes or No.

- §116(a)1: Doors and windows between conditioned and unconditioned spaces designed to limit air leakage.
- §116(a)2 and 3: Actual fenestration products installed are equivalent to or have a lower U-factor and/or a lower SHGC than that specified on the Certificate of Compliance (Form CF-1R).
- §116(a)4: Fenestration products (except field-fabricated windows) have a label listing the certified U-Factor, certified Solar Heat Gain Coefficient (SHGC), and infiltration that meets the requirements of §10-111(a)
- §117: Exterior doors and windows weather-stripped; all joints and penetrations caulked and sealed.

INSTALLATION CERTIFICATE**CF-6R-ENV-01****Envelope – Insulation; Roofing; Fenestration****(Page 3 of 3)****Site Address:****Enforcement Agency:****Permit Number:****DECLARATION STATEMENT**

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
- I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
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Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)

Responsible Person's Name:

Responsible Person's Signature:

CSLB License:

Date Signed:

Position With Company (Title):

Residential Lighting

Site Address:	Enforcement Agency:	Permit Number:
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1. Kitchen Lighting

Does project include kitchen lighting?

<input type="checkbox"/> Yes, complete section 1 <input type="checkbox"/> No, go on to section 2	
<input type="checkbox"/> Yes §150(k)3: The wattage of permanently installed luminaires (lighting fixtures) has been determined as specified by §130(d).	
<input type="checkbox"/> Yes <input type="checkbox"/> No §150(k)3: In the kitchen, are there electrical boxes finished with a blank cover or where no electrical equipment has been installed, and where the electrical box can be used for a luminaire or a surface mounted ceiling fan? If yes, the following row must also be yes:	
<input type="checkbox"/> Yes <input type="checkbox"/> NA Wattage has been calculated as 180 watts of low efficacy lighting per blank electrical box.	

§150(k)8 Kitchen Lighting must comply with either method (a), (b), or (c) below:

(a) All high efficacy luminaires

<input type="checkbox"/> Yes, complies because only high efficacy luminaires have been installed in the kitchen.
<input type="checkbox"/> No, complies with method (b) or (c).

(b) ≥ 50% watts used by high efficacy luminaires

<input type="checkbox"/> Yes, complies because at least 50% of the installed watts are from permanently installed high efficacy luminaires as demonstrated in the table below: Total A ≥ Total B.
<input type="checkbox"/> No, complies with method (a) or (c).

Fill out the following table if complying with either method (b) or (c).

Table (b)

Luminaire Type	Efficacy		Watts	x	Quantity	=	High Efficacy Watts	or	Low Efficacy Watts
	High	Low							
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
	<input type="checkbox"/>	<input type="checkbox"/>		x		=		or	
Complies with method (b) if $A \geq B$							Total: A:	\geq	B:

(c) Additional Kitchen Low Efficacy Lighting

<input type="checkbox"/> Yes, complies because the kitchen lighting qualifies for additional low efficacy lighting and as demonstrated in table in (b) (above) and the table in (c) (below) that $(A + C) \geq B$
<input type="checkbox"/> No, complies with method (a) or (b).

Additional kitchen low efficacy lighting is available only if all of the following are true:

<input type="checkbox"/> Yes. All low efficacy luminaires in the kitchen are controlled by a vacancy sensor Dimmer energy management control system (EMCS) or a multi-scene programmable control system.
<input type="checkbox"/> Yes. Permanently installed luminaires in garages laundry rooms closets greater than 70 square feet and utility rooms are high efficacy luminaires AND are controlled by a vacancy sensor.

Table (c)

From the Table in (b)		Use 50 W for dwelling units $\leq 2,500 \text{ ft}^2$ Use 100 W for dwelling units $> 2,500 \text{ ft}^2$	Add	Yes/No ?
A	B	C	A + C	Is $(A+C) \geq B$?

2. Lighting Internal to Cabinets

Does project includes lighting internal to cabinets?

<input type="checkbox"/> Yes, complete section 2 <input type="checkbox"/> No, go on to section 3
<input type="checkbox"/> Yes, §150(k)9: Permanently installed lighting internal to cabinets uses ≤ 20 watts of power per linear foot of illuminated cabinet.

Residential Lighting

Site Address:

Enforcement Agency:

Permit Number:

3. Installed Devices and Components Have Been Certified to the Energy Commission

Does the project include any of the devices or components listed below? Yes, complete section 3 No, go on to section 4

Yes

§119 and §150(k)7(F): Any of the following devices and components which have been installed have been certified to the Energy Commission according to the applicable provisions of §119: All LED lighting systems that are classified as high efficacy, ballasts used in recessed luminaires, vacancy sensors (automatic off/manual on occupant sensors), dimmers, track lighting integral current limiters, and outdoor motion sensors.

4. Lighting Controls Complete section 4

Yes NA §150(k)7A: Permanently installed low efficacy luminaires are controlled by switches separate from those controlling high efficacy luminaires.

Yes NA §150(k)7B: Exhaust fans with integral lighting systems are switched separately from lighting systems, OR have a lighting system that can be manually turned on and off while allowing the fan to continue to operate for an extended period of time.

Yes NA §150(k)7C: All permanently installed luminaires are switched with readily accessible controls that permit the luminaires to be manually switched on and off.

Yes NA §150(k)7D: All lighting controls have been installed in accordance with the manufacturer's instructions.

Yes NA §150(k)7E: All lighting circuits that are controlled by more than one switch, where a dimmer or vacancy sensor has been installed to comply with §150(k), no controls bypass the dimmer or vacancy sensor functions.

5. Luminaires (Lighting Fixtures)

Does the project include the installation of any luminaires (indoor or outdoor)?

Yes, complete section 5 No, go on to section 6

Yes, high efficacy luminaire classification has been determined according to §150(k)1, and low efficacy luminaire classification has been determined according to §150(k)2.

Yes NA §150(k)4: Fluorescent lamps rated 13 watts or greater have an electronic ballasts having an output frequency no less than 20 kHz.

Yes NA §150(k)5: Permanently installed night lights, and night lights integral to permanently installed luminaires or exhaust fans, contain only high efficacy lamps meeting the minimum efficacies contained in Table 150-C and do not contain a line-voltage socket or line voltage lamp holder, OR the night light is rated to consume no more than 5 watts of power and does not contain a medium screw-base socket.

Yes NA §150(k)6: Lighting integral to exhaust fans, in rooms other than kitchens, meet the applicable requirements of §150(k).

Yes NA Any electrical box finished with a blank cover or where no electrical equipment has been installed, and where the electrical box can be used for a luminaire or a surface mounted ceiling fan, has been treated as low efficacy luminaires for compliance with §150(k).

Does the project include any luminaires that are recessed into insulated ceilings?

Yes, complete the rest of section 5 No, go on to section 6

Yes, §150(k)12: Luminaires that are recessed into insulated ceilings meet all of the following conditions:

Yes, are listed, as defined in §101, for zero clearance insulation contact (IC) by UL or other nationally recognized testing/rating laboratory, and

Yes, have labels that certify the luminaires are airtight with air leakage less than 2.0 CFM at 75 Pascals when tested in accordance with ASTM E283 (Exhaust fan housings are not required to be certified airtight), and

Yes, are sealed with a gasket or caulk between luminaire housings and the ceiling, and all air leak paths between conditioned and unconditioned spaces have been sealed with a gasket or caulk. (including all exhaust fan housings), and

Yes, allows ballast maintenance and replacement to be readily accessible to building occupants from below the ceiling without requiring the cutting of holes in the ceiling.

6. Indoor Lighting (any indoor room that is not a kitchen)

Does the project include permanently installed luminaires in any room that is not a kitchen?

Yes, complete section 6 No, go on to section 7

Yes NA §150(k)10: Permanently installed luminaires in bathrooms, garages, laundry rooms, closets > 70 ft², and utility rooms are high efficacy luminaires OR are controlled by a vacancy sensor.

Yes NA §150(k)11: Permanently installed luminaires located in rooms or areas other than in kitchens, bathrooms, garages, laundry rooms, closets, and utility rooms are high efficacy luminaires, OR are controlled by a dimmer switch OR are controlled by a vacancy sensor.

Residential Lighting

Site Address:	Enforcement Agency:	Permit Number:
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7. Outdoor Lighting

Does the project include any permanently installed outdoor lighting?

<input type="checkbox"/> Yes, complete section 7 <input type="checkbox"/> No, go on to section 8	
<input type="checkbox"/> Yes <input type="checkbox"/> NA	§150(k)13: Luminaires providing outdoor lighting, including outdoor lighting for private patios on low-rise residential buildings with four or more dwelling units, entrances, balconies, and porches, and which are permanently mounted to a residential building or to other buildings on the same lot are high efficacy luminaires OR are controlled by a manual on/off switch, plus a motion sensor not having an override or bypass switch that disables the motion sensor, plus one of the following three additional control methods:
	a. A photocontrol that does not have an override or bypass switch that disables the photocontrol; or
	b. An astronomical time clock not having an override or bypass switch that disables the astronomical time clock; or
	c. Energy management controls systems (EMCS) not having an override or bypass switch that allows the luminaire to be always on.
<input type="checkbox"/> Yes <input type="checkbox"/> NA	Exception 2: Low efficacy outdoor luminaires used to comply with Exception 1 to §150(k)13 are controlled by an override switch which temporarily bypasses the motion sensing function, and the motion sensor is automatically reactivated within six hours. The luminaire is controlled by a photocontrol, astronomical time clock, or EMCS as required by Exception 1 to §150(k)13.
<input type="checkbox"/> Yes <input type="checkbox"/> NA	Exception 3: There are permanently installed luminaires in or around swimming pools, water features, or other locations subject to Article 680 of the California Electric Code which do not need to be high efficacy luminaires.
<input type="checkbox"/> Yes <input type="checkbox"/> NA	§150(k)14: Internally illuminated address signs comply with §148, OR do not contain a screw-base socket and consume no more than 5 watts of power as determined according to §130(d).
<input type="checkbox"/> Yes <input type="checkbox"/> NA	§150(k)15 Lighting for parking lots and carports with a total of 8 or more vehicles per site have lighting that complies with §130,132, 134, and 147. Lighting for parking garages for 8 or more vehicles comply with §130, 131, 134, and 146. If yes, the Nonresidential compliance forms must be submitted

8. Common areas of low-rise residential buildings

Does the project include the installation of any luminaires in common areas of low-rise residential buildings?

<input type="checkbox"/> Yes, complete section 8 <input type="checkbox"/> No, go on to section 9	
<input type="checkbox"/> Yes	§150(k)16: Permanently installed lighting in the enclosed, non-dwelling spaces of low-rise residential buildings with four or more dwelling units shall be high efficacy luminaires OR are controlled by occupant sensor(s) certified to comply with §119(d).

DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
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Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:	Responsible Person's Signature:	
CSLB License:	Date Signed:	Position With Company (Title):

INSTALLATION CERTIFICATE		CF-6R-MECH-01
Domestic Hot Water (DHW)		(Page 1 of 2)
Site Address:	Enforcement Agency:	Permit Number:

1. WATER HEATING SYSTEMS:

Heater Type	CEC Certified Mfr Name & Model Number	Distribution Type (Std, Point-of-Use, etc)	If Recirculation, Control Type	# of Identical Systems	Rated Input (kW or Btu/hr) ¹	Tank Volume (gallons)	Efficiency (EF, RE) ¹	Standby Loss (%) ¹

*Note 1: For **small gas storage** (rated input less than or equal to 75,000 Btu/hr), **electric resistance** and **heat pump water heaters**, list Energy Factor (EF). For **large gas storage water heaters** (rated input of greater than 75,000 Btu/hr), list Recovery Efficiency (RE), Thermal Efficiency, Standby Loss and Rated Input. For **instantaneous gas water heaters**, list the Thermal Efficiency and Rated Input.*

2. Mandatory Measures

TO COMPLY - ALL BOXES MUST BE CHECKED

§110-§113: Water heaters, showerhead and faucets are certified by the California Energy Commission.

§150(j): Water System Pipe and Tank Insulation. And Cooling Line Insulation

1. Storage tank insulation

- A. Storage gas water heaters rated with an Energy Factor no greater than the federal minimal standard are externally wrapped with insulation having an installed thermal resistance of R-12 or greater; and
- B. Unfired storage tanks or other indirect hot water tanks have R-12 external insulation or R-16 internal insulation where the internal insulation R-value is indicated on the exterior of the tank.

2. Water piping and cooling system line insulation thickness and conductivity

- First 5 feet of hot and cold water pipes closest to water heater tank, non-recirculating systems, and entire length of recirculating sections of hot water pipes are insulated per Standards Table 150-B; and
- Pipe insulation for steam hydronic heating systems or hot water systems >15 psi, meets the requirements of Standards Table 123-A.
- Insulation is protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind.

§151(f)8D: If indicated on the CF-1R, all hot water piping that runs from the hot water source to the kitchen fixtures is insulated per Standards Table 150-B.

INSTALLATION CERTIFICATE		CF-6R-MECH-01
Domestic Hot Water (DHW)		(Page 2 of 2)
Site Address:	Enforcement Agency:	Permit Number:

3. Central Water Heating in Buildings with Multiple Dwelling Units (required for prescriptive)

TO COMPLY - ALL BOXES MUST BE CHECKED

- All hot water piping in main circulating loop is insulated to requirements of §150(j)
- Central hot water systems serving six or fewer dwelling units which have (1) less than 25' of distribution piping outdoors; (2) zero distribution piping underground; (3) no recirculation pump; and (4) insulation on distribution piping that meets the requirements of Section 150(j)
- Central hot water systems serving more than 6 dwelling units - presence of either a time control or a time/temperature control

DECLARATION STATEMENT

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Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:		Responsible Person's Signature:
CSLB License:	Date Signed:	Position With Company (Title):

Site Address:	Enforcement Agency:	Permit Number:
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Space Conditioning Systems

Heating Equipment

Equip Type (package-heat pump)	CEC Certified Mfr. Name and Model Number	ARI Reference Number ²	# of Identical Systems	Efficiency (AFUE, etc.) ^{1,3} (≥CF-1R value) ⁴	Duct Location (attic, crawl-space, etc.)	Duct R-value	Heating Load (Btu/hr)	Heating Capacity (Btu/hr)

Cooling Equipment

Equip Type (package heat pump)	CEC Certified Mfr. Name and Model Number	ARI Reference Number ²	# of Identical Systems	Efficiency (SEER and EER) ^{1,3} (≥CF-1R value) ⁴	Duct Location (attic, crawl-space, etc.)	Duct R-value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)

1. If project is new construction, see Footnotes to Standards Table 151-B and Table 151-C for duct ceiling alternative compliance.
2. ARI Reference Number can be found by entering the equipment model number at <http://www.aridirectory.org/ari/ac.php#>
3. Listed efficiency on this page must be greater than or equal (≥) to the value shown on the CF-1R form.
4. When CF-1R is reference it is also applicable to the CF-1R, CF-1R-AA or CF-1R-ALT

ALL BOXES MUST BE CHECKED TO BE A VALID FORM

- §110-§113: HVAC equipment is certified by the California Energy Commission.
- §150(h): Heating and/or cooling loads calculated in accordance with ASHRAE, SMACNA, or ACCA.
- §150(i): Setback Thermostat on all applicable heating and/or cooling systems meet the requirements of §112(c).
- §150(j)2: Pipe insulation for cooling system refrigerant suction, chilled water and brine lines meets minimum requirements of Table 150-B and includes a vapor retardant or is enclosed entirely in conditioned space.

INSTALLATION CERTIFICATE		CF-6R-MECH-04
Space Conditioning Systems, Ducts and Fans		(Page 2 of 2)
Site Address:	Enforcement Agency:	Permit Number:

Ducts and Fans

§150(m): Duct and Fans

- 1. All air-distribution system ducts and plenums installed, sealed and insulated to meet the requirements of CMC Sections 601, 602, 603, 604, 605 and Standard 6-5; supply-air and return-air ducts and plenums are insulated to a minimum installed level of R-4.2 or enclosed entirely in conditioned space. Openings shall be sealed with mastic, tape or other duct-closure system that meets the applicable requirements of UL 181, UL 181A, or UL 181B or aerosol sealant that meets the requirements of UL 723. If mastic or tape is used to seal openings greater than 1/4 inch, the combination of mastic and either mesh or tape shall be used; and
- 1. Building cavities, support platforms for air handlers, and plenums defined or constructed with materials other than sealed sheet metal, duct board or flexible duct shall not be used for conveying conditioned air. Building cavities and support platforms may contain ducts. Ducts installed in cavities and support platforms shall not be compressed to cause reductions in the cross-sectional area of the ducts.
- 2D. Joints and seams of duct systems and their components shall not be sealed with cloth back rubber adhesive duct tapes unless such tape is used in combination with mastic and draw bands.
- 7. Exhaust fan systems have back draft or automatic dampers.
- 8. Gravity ventilating systems serving conditioned space have either automatic or readily accessible, manually operated dampers.
- 9. Protection of Insulation. Insulation shall be protected from damage, including that due to sunlight, moisture, equipment maintenance, and wind. Cellular foam insulation shall be protected as above or painted with a coating that is water retardant and provides shielding from solar radiation that can cause degradation of the material.
- 10. Flexible ducts cannot have porous inner cores.

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- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
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Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:		Responsible Person's Signature:
CSLB License:	Date Signed:	Position With Company (Title):

Site Address:	Enforcement Agency:	Permit Number:
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Ventilation for Indoor Air Quality (IAQ): All dwelling units shall meet the requirements of ANSI/ASHRAE standard 62.2. Ref: Title 24 Part 6 Section 150(o). Equation and table numbering on this CF-6R corresponds to the numbering for that information in the published ASHRAE Standard 62.2.

WHOLE-BUILDING VENTILATION

Ventilation Rate: A mechanical supply system, exhaust system, or combination thereof shall provide whole-building ventilation with outdoor air each hour at no less than the rate in equation 4.1a. For dwelling occupant densities known to be greater than ($N_{br} + 1$), the rate shall be increased by 7.5 cfm for each additional person.

(Eq. 4.1a) $Q_{fan} = 0.01A_{floor} + 7.5(N_{br} + 1)$

Where:
 A_{floor} = conditioned floor area, ft²
 N_{br} = number of bedrooms; not to be less than one
 Q_{fan} = ventilation air requirement = fan flow rate, (cfm)

Enter Eq 4.1a Calculation:
 A_{floor} =
 N_{br} =
 Q_{fan} =

Delivered Ventilation: The effective ventilation rate of an **intermittent** system is the combination of its delivered capacity, its fractional on-time, cycle time, and the ventilation effectiveness from Table 4.2. This calculation only applies to intermittent systems.

(Eq. 4.2) $Q_f = Q_r / (\epsilon f)$

Where:
 Q_r = ventilation air requirement from Eq. 4.1a (above)
 f = daily fractional on-time, (%)
 ϵ = ventilation effectiveness (from Table 4.2)
 Q_f = fan flow rate during the on-cycle (cfm)

Enter Eq 4.2 Calculation (if applicable).
 Q_r =
 f =
 ϵ =
 Q_f =

Table 4.2 – Ventilation Effectiveness for Intermittent Fans	
Daily Fractional On-Time, f	Ventilation effectiveness, ϵ
$f \leq 35\%$	0.33
$35\% \leq f < 60\%$	0.50
$60\% \leq f < 80\%$	0.75
$80\% \leq f$	1.0
Fan runs at least once every three hours	1.0

Whole-Building Ventilation Rate Summary

Select the method used to provide Whole-Building Ventilation and enter the required fan flow rate (cfm). Select one:

Continuous fan flow (cfm) = _____

Intermittent fan flow (cfm) = _____

Use the fan flow rate from this summary for selection of the whole-building ventilation fan and for the duct design for the whole-building ventilation system. Provide the system design information in applicable sections below.

LOCAL VENTILATION EXHAUST

Local mechanical exhaust fans shall be installed in each kitchen and bathroom. The minimum airflow rates shall be at least the amount indicated in tables 5.1 and 5.2.

Table 5.1 Intermittent Local Ventilation Exhaust Airflow Rates			Table 5.2 Continuous Local Ventilation Exhaust Airflow Rates		
Application	Airflow	Notes	Application	Airflow	Notes
Kitchen	100 cfm	Vented range hood required if exhaust fan flow is less than 5 ACH	Kitchen	5 ACH	Based on Kitchen Volume
Bathroom	50 cfm		Bathroom	20 cfm	

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VENTILATION SYSTEM DESIGN – Fan selection and duct design criteria for compliance

The airflow rates required refer to the delivered airflow of the system as installed and tested using a flow hood, flow grid, or other airflow measuring device. Alternatively, the airflow rating at a pressure of 0.25 in. w.c. of a certified fan may be used to demonstrate compliance without testing of the airflow of the installed system, provided the system duct sizing meets the prescriptive requirements of Table 7.1, or manufacturer's design criteria. Other methods may be used to provide the required ventilation rates when approved by a licensed design professional, subject to confirmation of delivered ventilation airflow of the installed system. Central Fan Integrated (CFI) ventilation systems shall demonstrate compliance by field testing of the delivered ventilation airflow of the installed system.

WHOLE-BUILDING VENTILATION SYSTEM DESIGN - Identify the ventilation system design criteria		
(select one criteria from this column)	Requirements for installer to demonstrate compliance with code	Airflow Test Required?
<input type="checkbox"/> Prescriptive design (Table 7.1)	Enter the installed ventilation air-moving equipment information and the installed ventilation duct system information in the tables below, and certify on the CF-6R that the installed system conforms to the Table 7.1 prescriptive design criteria.	no
<input type="checkbox"/> Central Fan Integrated (CFI)	Central forced air system fans used in Central Fan Integrated ventilation systems shall demonstrate, in air distribution mode, a watt draw less than 0.58 W/CFM per Standards §151(f)11. Submit a CF-6R-MECH-22-HERS form for each forced air unit used for a CFI system. HERS verification is required.	yes
<input type="checkbox"/> Engineered Design	Enter the installed ventilation air-moving equipment information and the installed ventilation duct system information in the tables below, and certify on the CF-6R that the installed system conforms to the engineered ventilation system design approved by the enforcement agency.	yes
<input type="checkbox"/> Manufacturer's design criteria	Enter the installed ventilation air-moving equipment information and the installed ventilation duct system information in the tables below, and certify on the CF-6R that the installed system conforms to the manufacturer's ventilation system duct design criteria.	no

LOCAL VENTILATION SYSTEM DESIGN - Identify the ventilation system design criteria		
(select one criteria from this column)	Requirements for installer to demonstrate compliance with code	Airflow Test Required?
<input type="checkbox"/> Prescriptive design (Table 7.1)	Enter the installed ventilation air-moving equipment information and the installed ventilation duct system information in the tables below, and certify on the CF-6R that the installed system conforms to the Table 7.1 prescriptive design criteria.	no
<input type="checkbox"/> Engineered Design	Enter the installed ventilation air-moving equipment information and the installed ventilation duct system information in the tables below, and certify on the CF-6R that the installed system conforms to the engineered ventilation system design approved by the enforcement agency.	yes
<input type="checkbox"/> Manufacturer's design criteria	Enter the installed ventilation air-moving equipment information and the installed ventilation duct system information in the tables below, and certify on the CF-6R that the installed system conforms to the manufacturer's ventilation system duct design criteria.	no

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Diameter, (in)	Flex Duct				Smooth Duct			
Fan Rating cfm @ 0.25 in. w.g.	50	80	100	125	50	80	100	125
	Maximum Allowable Duct Length (ft)							
Diameter, (in)	Flex Duct				Smooth Duct			
3	X	X	X	X	5	X	X	X
4	70	3	X	X	105	35	5	X
5	NL	70	35	20	NL	135	85	55
6	NL	NL	125	95	NL	NL	NL	145
7 and above	NL	NL	NL	NL	NL	NL	NL	NL

This table assumes no elbows. Deduct 15 ft of allowable duct length for each turn, elbow, or fitting. Interpolation and extrapolation in Table 7.1 is not allowed. For airflow values not listed, use the next higher value. This table is not applicable for airflow > 125 cfm.
 NL = no limit on duct length of this size.
 X = not allowed, any length of duct of this size with assumed turns, elbows, fittings will exceed the rated pressure drop.

INSTALLED VENTILATION AIR-MOVING EQUIPMENT INFORMATION

Ventilation devices and equipment shall be tested and rated by HVI procedures for airflow and sound. Sound rating maximum is 1.0 sone for all continuous duty fans; 1.0 sone for intermittent duty whole-building fans; and 3.0 sone for intermittent duty local exhaust fans. Refer to the Residential Compliance Manual section 4.6 for information about exclusions to these sound rating requirements. In the table below, list the fan equipment installed that meets the requirement for whole-building ventilation and local ventilation exhaust.

Fan or System Name or Location ¹	System Type ² (WBV or LVE)	Required Airflow ³ (CFM)	Fan Manufacturer Name ⁴	Fan Model Number ⁵	Certified Airflow ⁶ (CFM)	Sound Rating ⁷ (Sone)	Fan Watts ⁸	Calculate Fan (Watt per CFM) ⁹

- 1) Enter the Fan or System Identification Name or Location Name or System Identifier (e.g. "Bath02" "MastBath", "Kitchen01").
- 2) What type of ventilation requirement is the fan specified to meet? WBV (whole-building ventilation) or LVE (local ventilation exhaust).
- 3) Enter the required ventilation airflow values determined by the calculations or tables in the **WHOLE-BUILDING VENTILATION** and/or **LOCAL VENTILATION EXHAUST** sections at the beginning of this Installation Certificate (CFM). At least one fan must be designated for use for compliance with the "Whole-Building Ventilation" requirement.
- 4) Enter the fan manufacture's name.
- 5) Enter the fan model number or series number.
- 6) Enter the fan's Certified Airflow rating at 0.25 inch w.c. (CFM). Fans rated at less than 0.25 inch w.c. (e.g. 0.1 inch w.c.) cannot be used to comply with the ventilation requirements using the prescriptive design criteria in Table 7.1. This certified airflow rating value must be equal to or greater than the required airflow from column 3 of this table when demonstrating compliance using the prescriptive design criteria in Table 7.1.
- 7) Enter the fan's certified sound rating (Sone) corresponding to the certified airflow rating that was entered in column 6 of this table for the fan.
- 8) Enter the fan watt draw corresponding to the certified airflow rate that was entered in column 6 of this table for the fan.
- 9) Divide the Watt value from column 8 by the Certified Airflow value (CFM) from column 6. Fans are required to be rated for operation at less than 1.2 Watt/CFM.

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INSTALLED VENTILATION DUCT SYSTEM INFORMATION

Airflows required by the standard refer to delivered airflow of the installed system as determined by testing with a flow hood, flow grid, or other measuring device. Alternatively, the installed equipment's HVI airflow rating at a pressure of 0.25 inch w.c. may be used, provided the system can be inspected to confirm the duct sizing meets the prescriptive requirements of Table 7.1, or manufacturer's duct design criteria.

Fan or System Name or Location ¹	Compliance Method ² (T; P; or M)	Required Airflow ³ (CFM)	Airflow Test ⁴ (CFM)	Duct Type ⁵	Number of Elbows and Fittings ⁶	Actual Duct Length ⁷ (ft)	Allowable Duct Length ⁸ (ft)	Pass or Fail ⁹

1. Enter the Fan or System Identification Name, or Location Name, or System Identifier. These should be the same identifiers as shown in the INSTALLED VENTILATION AIR-MOVING EQUIPMENT INFORMATION table column 1 above.
2. Enter the method for demonstrating compliance with the ventilation airflow requirements. Enter "T" for Tested; "P" for Prescriptive Table 7.1 design criteria (inspection); "M" for Manufacturer's duct design criteria (inspection). Note: the building official may require submittal of manufacturer's published design criteria documentation if compliance is to be demonstrated by inspection of the installation for conformance to manufacturer's design criteria.
3. Enter the required ventilation airflow values determined by the calculations or tables in the WHOLE-BUILDING VENTILATION and/or LOCAL VENTILATION EXHAUST sections at the beginning of this Installation Certificate (CFM). These should be the same airflow values that were entered for each corresponding fan in column 3 of the INSTALLED VENTILATION AIR-MOVING EQUIPMENT INFORMATION table above.
4. If complying by a method that requires an Airflow Test of the installed system, enter the result from the Airflow Test for the installed system (CFM).
5. Enter duct type for the installed system. Choices are "Flex" or "Smooth" if using Table 7.1 for compliance.
6. Enter total number of elbows or fittings or abrupt turns in the ventilation duct for the installed system.
7. Enter the installed system's actual total duct length (ft).
8. If complying by use of the prescriptive design criteria or manufacturer's design criteria, enter the Maximum Allowable Duct Length (ft) for the system as determined by Table 7.1 or manufacturer's duct design criteria.
9. If complying by airflow test, the system passes if the Tested Airflow⁴ equals or exceeds the Required Airflow³. If complying by demonstrating conformance to prescriptive design criteria or manufacturer's design criteria, the system passes if actual total duct length from column 7 is less than the maximum allowed length from column 8. Enter: Pass or Fail

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OTHER REQUIREMENTS

The items listed below (6.1 through 6.8) correspond to the information given in ASHRAE 62.2 Section 6 "Other Requirements". Refer also to Chapter 4.6 of the Residential Compliance Manual (Section 4.6.5) for information describing these "Other Requirements". The signature of the Responsible Person in the declaration statement below certifies that the building complies with these requirements specified in ASHRAE 62.2 Section 6.1 through 6.8 if applicable.

- 6.1 Transfer Air
- 6.2 Instructions and Labeling
- 6.3 Cloths Dryers
- 6.4 Combustion and solid-fuel burning appliances
- 6.5 Garages
- 6.6 Ventilation Opening Area
- 6.7 Minimum filtration
- 6.8 Air Inlets

- Prescriptive Designs: For ventilation systems that utilize *prescriptive design* criteria, the signature of the Responsible Person in the declaration statement below certifies that the installed system conforms to the prescriptive ventilation system design criteria from Table 7.1 of Standard 62.2 and manufacturer's installation specifications.
- Engineered Designs: For ventilation systems that utilize *engineered design* criteria, the signature of the Responsible Person in the declaration statement below certifies that the installed system conforms to the engineered ventilation system design documentation approved by the enforcement agency.
- Manufacturer's design criteria: For ventilation systems that utilize *manufacturer's design criteria*, the signature of the Responsible Person in the declaration statement below certifies that the installed system conforms to the manufacturer's published duct system design criteria and installation specifications.

DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
- I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
- I reviewed a copy of the Certificate of Compliance (CF-1R) form approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF-1R that apply to the installation have been met.
- **I will ensure that a completed, signed copy of this Installation Certificate 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. I understand that a signed copy of this Installation Certificate is required to be included with the documentation the builder provides to the building owner at occupancy.**

Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:	Responsible Person's Signature:	
CSLB License:	Date Signed:	Position With Company (Title):

INSTALLATION CERTIFICATE		CF-6R-MECH-06
Evaporatively Cooled Condensing Units		(Page 1 of 2)
Site Address:	Enforcement Agency:	Permit Number:

HVAC SYSTEMS: *Evaporatively Cooled Condensing Units*

CEC Certified Mfr. Name and Model Number	# of Identical Systems	EER _a	EER _b	Duct Location (attic, etc.)	Duct R- value	Cooling Load (Btu/hr)	Cooling Capacity (Btu/hr)

EER_a = EER at 75° F wetbulb and 95° F dry bulb;

EER_b = EER at 65° F wetbulb and 82° F dry bulb

The system complies with all eligibility criteria:		YES	NO
1	EER at 95° F dry bulb and 75° F wet bulb temperature is listed with ARI	<input type="checkbox"/>	<input type="checkbox"/>
2	EER at 82° F dry bulb and 65° F wet bulb temperature is submitted to ARI and published in accordance with ARI guidelines.	<input type="checkbox"/>	<input type="checkbox"/>
Pass if: Yes in lines 1-5		<input type="checkbox"/>	<input type="checkbox"/>

The system complies with all eligibility criteria:		YES	NO
1	Water stays in the water casing.	<input type="checkbox"/>	<input type="checkbox"/>
2	Water pump starts running when the system is turned on.	<input type="checkbox"/>	<input type="checkbox"/>
3	When the water pump is running, verify that all the condenser coils are wet.	<input type="checkbox"/>	<input type="checkbox"/>
4	High pressure trip for the compressor is set (per manufacturer's documents) at or below 300 psig for R22 Refrigerant and at or below the saturation pressure corresponding to a temperature of 131 ⁰ F for all other refrigerants.	<input type="checkbox"/>	<input type="checkbox"/>
5	When the water supply to the water casing is turned off and the casing is drained, the water pump (if the pump is water cooled) and the compressor trip off.	<input type="checkbox"/>	<input type="checkbox"/>
6	Condenser coils have a corrosion-resistant coating.	<input type="checkbox"/>	<input type="checkbox"/>
7	Electrolytic protection is installed, and the wiring of the protection circuit is intact.	<input type="checkbox"/>	<input type="checkbox"/>
8	Water casing is made up of corrosion-resistant material.	<input type="checkbox"/>	<input type="checkbox"/>
9	A blow-down pump is installed for periodic blow-down in order to remove solids from the water casing. Operation of this pump is automatic and is linked to compressor run time or conductivity of the water in the casing.	<input type="checkbox"/>	<input type="checkbox"/>
10	Water casing is sloped downward toward the blow-down pump location.	<input type="checkbox"/>	<input type="checkbox"/>
11	Drift elimination is in place, there is not a mist of water exiting with the exhaust air.	<input type="checkbox"/>	<input type="checkbox"/>
12	Verify that condensate from the cooling coils is routed to water casing unless a document is submitted to the Building Department showing that doing so is not practical due to availability of space, health, or safety concerns.	<input type="checkbox"/>	<input type="checkbox"/>

INSTALLATION CERTIFICATE		CF-6R-MECH-06
Evaporatively Cooled Condensing Units		(Page 2 of 2)
Site Address:	Enforcement Agency:	Permit Number:

13	Condenser has manufacturer's certification that water consumption is less than or equal to 5.0 gallons per ton-hour of capacity at ARI Rating conditions.	<input type="checkbox"/>	<input type="checkbox"/>
14	Water connection is made with tubing not more than 1/4" ID at the unit. Larger line may come up to the connection.	<input type="checkbox"/>	<input type="checkbox"/>
15	Overflow from the unit is not connected directly to the sewer drain (so that in the event of a water float failure, an overflow condition can be more easily detected) or another means of determining an overflow condition is provided.	<input type="checkbox"/>	<input type="checkbox"/>
Pass if: Yes in lines 1-15		<input type="checkbox"/>	<input type="checkbox"/>

- EER for evaporatively cooled condensers must be verified by a HERS rater.
- Ducts are required to be tested and sealed in all evaporatively cooled condenser installations, and the duct sealing must be verified by a HERS rater.
- Proper refrigerant charge or a Charge Indicator Light (certified by the Energy Commission) must be verified by a HERS rater for all evaporatively cooled condenser installations.

DECLARATION STATEMENT

- I certify under penalty of perjury, under the laws of the State of California, the information provided on this form is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
- I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
- I reviewed a copy of the Certificate of Compliance (CF-1R) form approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF-1R that apply to the installation have been met.
- **I will ensure that a completed, signed copy of this Installation Certificate 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. I understand that a signed copy of this Installation Certificate is required to be included with the documentation the builder provides to the building owner at occupancy.**

Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:	Responsible Person's Signature:	
CSLB License:	Date Signed:	Position With Company (Title):

INSTALLATION CERTIFICATE		CF-6R-MECH-07
Evaporative Coolers		(Page 1 of 2)
Site Address:	Enforcement Agency:	Permit Number:

Evaporative Cooler Units

CEC Certified Mfr. Name and Model Number	# of Identical Systems	EER	Duct Location (attic, etc.)	Duct R-value	Total Power (watts)
		13			
		13			
		13			
		13			

The system complies with all eligibility criteria:		<input type="checkbox"/> System Qualifies	
1	The equipment manufacturer shall certify to the Commission that water use does not exceed 7.5 gallons per ton hour based on the Title 20 Appliance Standards testing criteria.	✓ <input type="checkbox"/> Yes	✓ <input type="checkbox"/> No
2	Equipment shall be permanently installed (no window or portable units).	<input type="checkbox"/> Yes	<input type="checkbox"/> No
3	Installation shall provide for automatic relief of supply air from the house with maximum air velocity through the relief dampers not exceeding 800 fpm (at the Title 20 rated airflow). Pressure relief dampers and ductwork shall be distributed to provide adequate airflow through all habitable rooms. For installations with an attic, ceiling dampers shall be installed to relieve air into the attic, and then to outside through attic vents. For installations without an attic, sidewall relief dampers are acceptable.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
4	To minimize water consumption, bleed systems are not allowed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
5	A water quality management system (either “pump down” or conductivity sensor) is required. “Pump down” systems can either be integral to the evaporative cooler or they can be accessories that operate on a timed interval. The time interval between dumps shall be set to a minimum of six hours of cooler operation. Longer intervals are encouraged if local water quality allows	<input type="checkbox"/> Yes	<input type="checkbox"/> No
6	Automatic thermostats are required. On/off control is not allowed.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
7	If the evaporative cooler duct system is shared with a heating and/or cooling system, the installed duct system shall employ backdraft dampers at the evaporative cooler supply.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
8	The installing contractor must provide a winter closure device that substantially blocks outdoor air from entering the indoor space.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
9	The size of the water inlet connection at the evaporative cooler shall not exceed 3/8”.	<input type="checkbox"/> Yes	<input type="checkbox"/> No
10	Unless prohibited by local code, the sump overflow line shall not be directly connected to a drain and shall be terminated in a location that is normally visible to the building occupants.	<input type="checkbox"/> Yes	<input type="checkbox"/> No

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Evaporative Coolers		(Page 2 of 2)
Site Address:	Enforcement Agency:	Permit Number:

11	System type is either indirect or direct/indirect Note: direct evaporative coolers cannot be used as part of the evaporative cooling compliance option. (Circle witch type)	indirect	direct/ indirect
	Pass if: Yes in lines 1-	<input type="checkbox"/> Pass	<input type="checkbox"/> Fail

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- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for construction, or an authorized representative of the person responsible for construction (responsible person).
- I certify that the installed features, materials, components, or manufactured devices identified on this certificate (the installation) conforms to all applicable codes and regulations, and the installation is consistent with the plans and specifications approved by the enforcement agency.
- I reviewed a copy of the Certificate of Compliance (CF-1R) form approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF-1R that apply to the installation have been met.
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Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:		Responsible Person's Signature:
CSLB License:	Date Signed:	Position With Company (Title):