



## 2008 Building Energy Efficiency Standards Residential HVAC Alterations Climate Zones 1 and 3 through 7

### BUSINESS AND PROFESSIONS CODE, SECTION 7110

Willful or deliberate disregard and violation of the building laws, including the California Building Code, and local permit requirements constitutes a cause for disciplinary action from the Contractors State License Board working in conjunction with the local building department. This action may consist of fines up to \$5,000 per violation or suspension/revocation of a contractor's license.

### WHEN IS A PERMIT REQUIRED?

A written construction permit shall be obtained from the enforcement agency prior to the erection, construction, reconstruction, installation, relocation, or alteration of any mechanical system, except as permitted in Appendix Chapter 1, Section 112.2 of the 2007 California Mechanical Code.

Projects requiring permits include, but are not limited to:

- New HVAC installation
- HVAC Changeout
- Replacement of furnace, coil, FAU, or condenser
- Relocation of an existing HVAC unit
- Adding or replacing more than 40ft ducting in unconditioned space

### 2008 BUILDING ENERGY EFFICIENCY STANDARDS (Title 24, Part 6)

#### REQUIREMENTS INCLUDE:

1. Heating equipment must have a minimum 78% AFUE (Exception: Wall & floor furnaces; room heaters).
2. Central air conditioners & heat pumps less than 65,000 Btu/hr must have a minimum 13 SEER.
3. Newly installed or replaced ducts must have a minimum insulation value of R-4.2.
4. A setback type thermostat (24 hr clock with four set points) is required for all alterations.
5. New or replacement ducts must meet the mandatory requirements of Section 150(m):
  - All joints and openings in the in the HVAC system must be sealed.
  - Only UL 181, UL 181A, or UL 181B approved tapes or mastic shall be used to seal duct openings.
  - Connections of metals ducts and the inner core of flex ducts shall be mechanically fastened. Flex ducts must be connected using a metal sleeve/coupling.
  - Flex ducts that are suspended must be supported every 4ft. max for horizontal runs with no more than 2" of sag between supports and 6 ft. max for vertical runs.
6. The **CF-6R-MECH-04** must be completed and signed by the installing contractor. The Inspector will collect this form and verify that the model numbers are the same as the installed equipment.

**Simplified Prescriptive Certificate of Compliance: 2008 Residential HVAC Alterations**    **CF-1R-ALT-HVAC**  
 Climate Zones 1 and 3 - 7

<b>Site Address:</b>		<b>Enforcement Agency:</b>		<b>Date:</b>	<b>Permit #:</b>
<b>Equipment Type<sup>1</sup></b>	<b>List Minimum Efficiency<sup>2</sup></b>		<b>Conditioned Floor Area</b>	<b>Duct insulation requirement</b>	<b>Thermostat</b>
<input type="checkbox"/> Packaged Unit <input type="checkbox"/> Furnace <input type="checkbox"/> Indoor Coil <input type="checkbox"/> Condensing Unit <input type="checkbox"/> Other	<input type="checkbox"/> AFUE _____ <input type="checkbox"/> SEER _____ <input type="checkbox"/> EER _____	<input type="checkbox"/> COP _____ <input type="checkbox"/> HSPF _____ <input type="checkbox"/> Resistance _____	Served by system _____ sf	Over 40 ft of ducts added or replaced in unconditioned space <input type="checkbox"/> R 6 (CZ 1, 3-5)	<input type="checkbox"/> Setback <i>(If not already present, must be installed)</i>

1. **Equipment Type:** Choose the equipment being installed; if more than one system, use another CF-1R-ALT-HVAC for each system.  
 2. **Minimum Equipment Efficiencies:** 13 SEER, 78% AFUE, 7.7HSPF for typical residential systems.

**Contractor (Documentation Author's /Responsible Designer's Declaration Statement)**

- I certify that this Certificate of Compliance documentation is accurate and complete.
- I am eligible under Division 3 of the California Business and Professions Code to accept responsibility for the design identified on this Certificate of Compliance.
- I certify that the energy features and performance specifications for the 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 design features identified on this Certificate of Compliance are consistent with the information documented on other applicable compliance forms, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with the permit application.

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

<b>INSTALLATION CERTIFICATE</b>		<b>CF-6R-MECH-04</b>
<b>Space Conditioning Systems, Ducts and Fans</b>		<b>(Page 1 of 2)</b>
Site Address:	Enforcement Agency:	Permit Number:

## Space Conditioning Systems

### Heating Equipment

Equip Type (package-heat pump)	CEC Certified Mfr. Name and Model Number	ARI Reference Number <sup>2</sup>	# of Identical Systems	Efficiency (AFUE, etc.) <sup>1,3</sup> (≥CF-1R value) <sup>4</sup>	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 <sup>2</sup>	# of Identical Systems	Efficiency (SEER and EER) <sup>1,3</sup> (≥CF-1R value) <sup>4</sup>	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.

<b>INSTALLATION CERTIFICATE</b>		<b>CF-6R-MECH-04</b>
<b>Space Conditioning Systems, Ducts and Fans</b>		<b>(Page 2 of 2)</b>
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.

### 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-IR) form approved by the enforcement agency that identifies the specific requirements for the installation. I certify that the requirements detailed on the CF-IR 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):