

Prescriptive Residential Alterations to Space Conditioning Systems

CEC-CF1R-ALT-02-E

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF COMPLIANCE

CF1R-ALT-02-E

Note: This table completed by [HERS Registry](#).

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Registration Number:	Registration Date/Time:	HERS Provider:
Project Name:	Project Address:	Date Prepared:
Enforcement Agency: City of Benicia	Permit Number:	

A. General Information

01	Project Name:		02	Date Prepared:	
03	Project Location:		04	Building Type:	
05	CA City:		06	Dwelling Unit Name:	
07	Zip Code:		08	Dwelling Unit CFA (ft ²):	
09	Climate Zone:	12	10	Number of Space Conditioning (SC) Systems in this Dwelling Unit:	

B. Space Conditioning (SC) System Information

01	02	03	04	05	06	07	08	09	10
SC System ID/Name	SC System Description of Area Served	CFA served by this SC System (ft ²):	Is the SC system a ducted system?	Installing a refrigerant containing component?	Installing new SC system components?	Installing more than 25 feet of duct?	Installing entirely new duct system?	Installing entirely new SC system?	Alteration Type:

Minimum requirements for prescriptive HVAC alteration compliance can be found in Building Energy Efficiency Standards Section 150.2(b)1C.

Completing these forms will require that you have the 2022 Reference Appendices for the 2022 Building Energy Efficiency Standards. When the term CF1R is used, it is referencing the CF1R-ALT-02.

Pages 1 and 6 are required to be submitted along with any applicable sections:

- C. Extension of Existing Duct System, Greater Than 25 Feet (Section 150.2(b)1Diib)
- D. Altered Space Conditioning System (Sections 150.2(b)1E and F)
- E. Entirely New or Complete Replacement Duct System, with or without Equipment Changeout (Sections 150.2(b)1Diia and 150.2(b)1E and F)
- F. Entirely New or Complete Replacement Space Conditioning System (Section 150.2(b)1C)

Exemptions from HERS verification compliance (below) will require SC System Identification/Name and Location or Area Served information.

- a: Space conditioning system was not altered;
- b: Less than 25 feet of ducts were added or replaced;
- c: (exempt from duct leakage testing) if: the existing duct system was insulated with asbestos;
- d: (exempt from duct leakage testing) if: the existing duct system was previously tested and passed by a HERS Rater.

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C. Extension of Existing Duct System, Greater than 25 Feet (Section 150.2(b)1Diib)Required Documentation:

*CF2R-MCH-01-E Space Conditioning Systems

Duct insulation requirement for the new portions of supply-air and return-air ducts or plenums: R-6 (CZ 3,5-7) and R-8 (CZ1,2,4,8-16).

*CF2R & CF3R-MCH-20-H Duct Leakage Test

Leakage rate compliance: less than or equal to 10%, or less than or equal to 7% leakage to outside, or seal all accessible leaks

Exceptions:

Existing duct systems constructed, insulated, or sealed with asbestos are exempt from MCH-20 duct leakage testing requirement

01	02	03
SC System ID/Name	SC System Description of Area Served	Required New Duct R-Value

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D. Altered Space Conditioning System (Sections 150.2(b)1E and F)Required Documentation:

*CF2R-MCH-01-E Space Conditioning Systems

Duct insulation requirement for the new portions of supply-air and return-air ducts or plenums: R-6 (CZ3, 5-7) and R-8 (CZ1,2,4,8-16)

*CF2R & CF3R-MCH-20-H Duct Leakage Test required when heating or cooling components are installed in ducted systems, or when more than 25 feet of duct length is replaced.

Leakage rate compliance: less than or equal to 10%, or less than or equal to 7% leakage to outside or seal all accessible leaks.

*CF2R & CF3R-MCH-25-H Refrigerant Charge verification required when refrigerant containing components are installed or altered (applicable in CZ 2, 8-15)

*CF2R & CF3R-MCH-23 Airflow Rate greater than or equal to 300 CFM/ton required when MCH-25 is required.

Exceptions:

-Duct systems registered with HERS provider as previously sealed are exempt from MCH-20 Duct Leakage Testing requirements.

-Heating-only systems and Air Handler/Furnace changes do not require verification of Air Flow MCH-23, or Refrigerant Charge MCH-25.

-Existing duct systems constructed, insulated, or sealed with asbestos are exempt from MCH-20 Duct Leakage Testing requirements.

01	02	03	04	05	06	07	08	09	10	11	12	13
SC System ID/Name	SC System Description of Area Served	Heating System Type	Altered Heating Component	Heating Efficiency Type	Heating Minimum Efficiency Value	Cooling System Type	Altered Cooling Components	Cooling Efficiency Type	Cooling Minimum Efficiency Value	Required Thermostat Type	New or Replaced Duct Length	New Duct R-Value

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E. Entirely New or Complete Replacement Duct System, with or without Equipment Changeout (Sections 150.2(b)1Diia and 150.2(b)1E, F)Required Documentation:

*CF2R-MCH-01-E Space Conditioning Systems

Duct insulation requirement for the new portions of supply-air and return-air ducts or plenums: R-6 (CZ3, 5-7) and R-8 (CZ1,2,4,8-16)

*CF2R & CF3R-MCH-20-H Duct Leakage Test required

Leakage rate compliance: less than or equal to 5%.

*CF2R & CF3R-MCH-22 Fan Efficacy

*CF2R & CF3R-MCH-23 Airflow Rate

Compliance: Fan Efficacy less than or equal to 0.58 W/cfm for non-gas furnaces and 0.45 W/cfm for gas furnaces and System Airflow greater than or equal to 350 cfm/ton.

Alternate Compliance: CF2R & CF3R-MCH-28 Return Duct Design verifications is an alternative to MCH-22 and MCH-23 verification.

*CF2R & CF3R-MCH-25-H Refrigerant Charge verification required when refrigerant containing components are installed or altered (applicable in CZ2, 8-15).

Exceptions:

-Heating-only systems are exempt from the 0.58 W/cfm and 350 cfm/ton requirements.

Note:

An "entirely new or complete replacement duct system" means at least 75% of the duct system is new duct material, and up to 25% may consist of reused parts from the dwelling unit's existing duct system (e.g., registers, grilles, boots, air handler, coil, plenums, duct material) if the reused parts are accessible and can be sealed to prevent leakage.

01	02	03	04	05	06	07	08	09	10	11	12
SC System ID/Name	SC System Description of Area Served	Heating System Type	Altered Heating Component	Heating Efficiency Type	Heating Minimum Efficiency Value	Cooling System Type	Altered Cooling Components	Cooling Efficiency Type	Cooling Minimum Efficiency Value	Required Thermostat Type	New Duct R-Value

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F. Entirely New or Complete Replacement Space Conditioning System (Section 150.2(b)1C)Required Documentation:

*CF2R-MCH-01-E Space Conditioning Systems

Duct insulation requirement for the new portions of supply-air and return-air ducts or plenums: R-6 (CZ3, 5-7) and R-8 (CZ1,2,4,8-16)

*CF2R & CF3R-MCH-20-H Duct Leakage Test required

Leakage rate compliance: less than or equal to 5%.

*CF2R & CF3R-MCH-22 Fan Efficacy

*CF2R & CF3R-MCH-23 Airflow Rate

Compliance: Fan Efficacy less than or equal to 0.58 W/cfm for non-gas furnaces and 0.45 W/cfm for gas furnaces and System Airflow greater than or equal to 350 cfm/ton.

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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

RESPONSIBLE PERSON'S DECLARATION STATEMENT

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

- The information provided on this Certificate of Compliance is true and correct.
- I am eligible under Division 3 of the Business and Professions Code to accept responsibility for the building design or system design identified on this Certificate of Compliance (responsible designer).
- The energy features and performance specifications, materials, components, and manufactured devices for the building design or system design identified on this Certificate of Compliance conform to the requirements of Title 24, Part 1 and Part 6 of the California Code of Regulations.
- The building design features or system design features identified on this Certificate of Compliance are consistent with the information provided on other applicable compliance documents, worksheets, calculations, plans and specifications submitted to the enforcement agency for approval with this building permit application.
- I understand that a registered copy of this Certificate of Compliance shall be made available with the building permit(s) issued for the building and made available to the enforcement agency for all applicable inspections, and I will take the necessary steps to accomplish this requirement.
- I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the building provides to the building owner at occupancy, and I will take the necessary steps to accomplish these requirements.

I understand that a registered copy of this Certificate of Compliance is required to be included with the documentation the builder provides to the building owner at occupancy.

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

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