A. GENERAL INFORMATION

Project Name:		**Date:**	
Project Location:		**Compliance Method:**	
CA City:		**Building Front Orientation (deg or cardinal):**	
Zip Code:		**Number of Dwelling Units:**	
Climate Zone:		**Fuel Type:**	
Building Type	☐ Single Family ☐ Multi Family	**Conditioned Floor Area:**	
Project Type:	☐ Heating System ☐ Cooling System ☐ Duct System		

A. HVAC SYSTEMS – HEATING/COOLING (Prescriptive section 150.2(b))

1	2	3	4	5	6	7	8	9
Heating Alteration Type	Heating Component	Heating System Type	Heating Efficiency	Cooling Alteration Type	Cooling Component	Cooling System Type	Cooling Efficiency	Thermo-stat Type

HERS VERIFICATION

See below for specific HERS verifications that are required for this alteration. Generally, the requirements are:

- New or replacement heating or cooling systems will require a HERS Rater to conduct duct leakage testing on existing or new ducts.
- Alterations that include replacing the air handler, heating or cooling coil, or outdoor condensing unit will require that a HERS Rater conduct duct leakage testing on existing or new ducts (unless the system previously had HERS verified duct leakage testing, has less than 40 lineal feet of duct in unconditioned space, or the existing ducts are constructed, insulated or sealed with asbestos).
- Cooling system alterations to replace or add refrigerant-containing systems such as compressor, condensing coil, evaporative coil, refrigerant metering device or refrigerant piping, will require HERS verification of refrigerant charge. Central cooling systems will also require maximum fan Watt draw verification and replacement of any non-setback thermostats.

EFFICIENCY

If installing new equipment and the efficiency is unknown, here is a guide to minimum requirements for common system types:

- Central gas furnaces have a minimum efficiency of 78% AFUE, heat pumps 7.7 HSPF. While any gas heating appliance sold in California is acceptable for prescriptive compliance, the only types of electric systems allowed are heat pumps and mini-split heat pumps.
- Central cooling systems and heat pumps have a minimum efficiency of 13 SEER. Room air conditioners and room heat pumps are rated with an EER and the efficiency required varies by the size of the system.

B. DUCT SYSTEMS (Section 150.2(b)1D)

1	2	3	4	5	6
Duct Alteration Type	Distribution System Type	Duct Location	Duct R-Value	New or Replaced Duct Length	Comments

- Ductwork may not be extended to provide conditioned air to spaces currently unconditioned. Such an alteration is “added conditioned space” and requires a different CF-1R form.
- If more than 40 feet of duct length outside of the conditioned space is new or replacement ductwork, the new ducts must meet current prescriptive insulation levels of R-6 in zones 2, 8-10, and 12-13 or R-8 in zones 11, 14 or 15; comply with mandatory duct construction requirements (excluding (m)12 though (m)15), and meet duct leakage requirements applicable to altered duct systems (varying from 10-15% leakage to outside or seal all accessible leaks). Duct leakage requirements vary depending on whether the ducts are an entirely new or replacement system, or are an extension of an existing system.

DRAFT

C. HERS VERIFICATION SUMMARY

The enforcement agency should pay special attention to the HERS Measures specified in this checklist below. A registered Certificate of Verification for all the measures specified shall be submitted to the building inspector before final inspection.

Ducts

- Duct leakage testing required (Residential Appendix RA3.1)
- Heating and cooling systems are ductless, no HERS verification required

Refrigerant Charge

- Refrigerant Charge Testing is required (Residential Appendix RA3.2) in climate zones 2 and 8-15
- No cooling system installed

Central System Air Handlers

- Fan Efficacy (Residential Appendix RA3.3) or System Design
- No cooling system installed
- Non-ducted cooling system

D. Required Forms

Alteration	Installation Forms	HERS Verification Forms

E. DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

Responsible Building Designer's Declaration Statement

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

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

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

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CF-1R-PRSC-ALT-03 Prescriptive Instructions

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

Completing these forms will require that you have the Reference Appendices for the 2013 Building Energy Efficiency Standards. This document contains the Joint Appendices which are used to determine climate zone and to complete the section for opaque surfaces.

Instructions for sections with column numbers and row numbers are given separately.

If any part of the alteration does not comply, prescriptive compliance fails. The performance compliance approach may be used but trade off of mandatory requirements is not permitted.

When an alteration requires HERS (Home Energy Rating System) verification, a person other than the installer must conduct verification, inspection, or testing based on the work being performed. The HERS requirements are automatically generated in a table on the PRSC-ALT form.

A. GENERAL INFORMATION

1. Project Name: Identifying information, such as owner's name.

2. Project Location: Legal street address of property or other applicable identifying information.

3. CA City: Legal city/town of property.

4. Zip Code: 5-digit zip code for the project location (used to determine climate zone).

5. Climate zone: From Joint Appendix JA2.1.1.

6. Building Type: Single Family (includes duplex), or Multi Family (a building that shares common walls and common floors or ceilings).

7. Project Type: Check all that apply – insulation, roof replacement, fenestration/glazing, heating system, cooling system, duct system, and/or water heating alteration.

8. Date: Date of document preparation.

9. Compliance Method: Prescriptive.

10. Building Front Orientation: Building front expressed in degrees, where North = 0, East = 90, South = 180, and West = 270. Indicate cardinal if it is a subdivision or multi-family project that will be built in

multiple orientations. The standards (section 100.1) include the following additional details for determining orientation:

- Cardinal covers all orientations (for buildings that will be built in multiple orientations);
- North is oriented to within 45 degrees of true north, including 45 degrees east of north;
- East is oriented to within 45 degrees of true east, including 45 degrees south of east;
- South is oriented to within 45 degrees of true south, including 45 degrees west of south;
- West is oriented to within 45 degrees of true west, including 45 degrees south of west.

11. Number of Dwelling Units: 1 for single-family, 1 or more for multifamily.

12. Fuel Type: Natural Gas, Liquefied Propane Gas, or Electricity. NOTE: prescriptive compliance only allows electricity if existing appliances are electric and natural gas is not available in the building.

13. Total Conditioned Floor Area: Enter the new conditioned floor area in ft2, as measured from the outside of exterior walls of the dwelling unit or building being altered.

B. HVAC SYSTEMS – HEATING/COOLING

Specific requirements of the standards apply to heating, cooling, and duct system alterations based on the details of the alteration and the system type of system, based on the requirements of Section 150.2(b)1). A completely new system will meet most of the mandatory requirements that would apply to a new dwelling, as well as most of the prescriptive requirements, which vary by climate zone. When a system is altered or replaced, it may trigger some of the same requirements that apply to new systems and to duct alterations. [NOTE: Computer performance compliance may be used to trade-off any requirements that are not mandatory.]

Heating System Alterations

If a new system is installed, this triggers all heating system requirements for a new dwelling, as well as duct sealing requirements that apply to duct alterations, even if duct alterations are not proposed. Similar requirements are triggered if the heating system alteration includes replacing an air handler or heating coil.

Your HERS rater will know the more specific requirements that apply when the project details are known.

Cooling System Alterations

If a new system is installed, this triggers many of the cooling system requirements of a new dwelling, as well as duct sealing requirements that apply to duct alterations, even if duct alterations are not proposed. Similar requirements are triggered if the cooling system alteration includes adding or replacing parts of the system such as the air handler, outdoor condensing unit or cooling coil.

If an alteration is to a refrigerant-containing system, setback thermostat requirements of Section 110.2(c) must be met.

Complete the following section:

1. Floor Area Served (ft2): Indicate the conditioned floor area that the system will be heating and/or cooling.
2. Existing Fuel Type: Indicate Natural Gas, Propane, or Electric.
3. Heating Alteration Type: The two types are Alteration or New. Select "Alteration" if parts of an existing system are being changed or if it is unknown what specific changes to the system will be made. Select "New" if a completely new or replacement system is being installed.
4. Heating System Type: Type may be furnace, central heat pump, boiler, hydronic, wood heat, wall furnace, room heater, room heat pump, mini-split heat pump, electric resistance (if it meets the limitations of the standards), or unknown.

   ELECTRIC: Electric resistance heating may be installed if (A) natural gas is not available at the building location and the existing heating system is electric (150.2(b)1Cii), or (B) the system is supplemental to the main heating source, has a capacity of < 2 KW, and has a time-limiting control device that allows it to be operated for 30-minutes at a time.

5. Heating Efficiency: If the system type is known and if the efficiency is known. As a general guide, for a central gas heating systems the minimum efficiency required by the appliance efficiency standards is 78% AFUE, heat pumps have an HSPF of 7.7 or higher. Other appliance types will have different efficiency levels (e.g., a gas wall furnace may have a minimum requirement of 73% AFUE or lower, depending on the size and type). Any new gas heating appliance (or heat pump) sold in California is acceptable. Other than heat pumps, electric heating devices (if allowed by the above limitation) are not regulated by the appliance efficiency standards.
6. Cooling Alteration Type: The two types are Alteration or New. Select "Alteration" if parts of an existing system are being changed or if it is unknown what specific changes to the system will be made. Select "New" if a completely new or replacement system is being installed.
7. Cooling System Type: Indicate central system, mini-split heat pump, no cooling, room air conditioner, room heat pump, or unknown.
8. Cooling efficiency: If the system type is known and if the efficiency is known. For central cooling systems, the minimum efficiency required is 13 SEER. Other appliance types will have different efficiency levels (e.g., a room air conditioner may have a minimum requirement of 9 EER (when an appliance standard is an EER this is considered equivalent to an SEER). Any new cooling appliance sold in California is acceptable.
9. Thermostat type: Types include setback, EMS (Energy Management System), unknown, or N/A.

   When required by the type of alteration and the type of system, thermostat control requirements are for a setback thermostat or a central EMS that allows programming up to 4 temperature setpoints within 24 hours (Section 110.2(c)). Heat pumps have an additional requirement to control the supplementary heating (which is less efficient than the heat pump) (Section 110.2(b)2).

EXEMPTIONS: If the system type is a gravity gas wall, floor or room heater, non-central electric heater, fireplace, decorative gas appliance, wood stove, room air conditioner or room heat pump, a setback thermostat or energy management control system is not required ("N/A").

C. DUCT SYSTEMS

It is not necessary to know the full extent of alterations planned. The mechanical system installer and HERS Rater will know what requirements apply for the duct construction, insulation, and duct leakage testing based on the specifics of the building alteration.

If a duct system is being new or replaced, the duct insulation and duct sealing requirements apply as if it was a new dwelling unit. If a duct system is altered or extended (by more than 40 feet of added duct), and in some cases when the heating and/or cooling system is completely replaced or altered, duct leakage testing is triggered (Section 150.2(b)1). While a new duct system must not leak any more than 6% of conditioned air to unconditioned space, an existing duct system will not be required to meet this same requirement. The standards include provisions for minimizing leakage as much as possible.

1. Duct Alteration Type: Select either Alteration (moving ductwork to a previously unheated space is an Addition and this CF-1R form is not the right document), New (if a new or replacement duct system is being installed), or Unknown.
2. Distribution System Type: Select Ducted, Piping, Ductless, or Unknown.
3. Duct location: If the system has ducts, indicate the primary location. Locations include attic, garage, conditioned space, no ducts, or unknown.
4. Duct R-value: If the system is new or replacement, a ducted system in Climate Zones 2, 8-10 and 12-13 requires R-6 duct insulation, and in climate zones 11 and 14-15 requires R-8 duct insulation. If ducts are installed in conditioned space (which must be HERS verified), this field will be N/A. If system is ductless this field will be N/A.
5. Comments: Any notes regarding location or unique conditions.

NOTE: When duct sealing to an existing duct system is triggered by the changes being made, a narrow exception is provided only when the existing duct system is constructed, insulated or sealed with asbestos.

NOTE: Some alterations to the heating and/or cooling system will trigger duct leakage testing.

D. HERS MEASURES

HERS measures that are required will be listed in this section. A HERS rater will be required to complete inspections, verifications, or testing during construction of the addition. Possible verifications include:

1. Duct Leakage Testing: All duct systems must meet maximum duct leakage requirements. The maximum leakage for a new duct system is typically 6% but varies based on when the duct leakage test is performed and the type of building (single family, townhouse, multifamily). Duct testing for existing

duct systems have higher leakage level targets. See Residential Appendix RA3, Table RA3.1-2. Additionally, a ductless system and existing duct systems constructed with asbestos are exempt.

2. Central System Air Handlers: The system must meet the prescriptive requirement for a fan efficacy less than or equal to 0.58 W/CFM. See Section 150.1(c)10 and Reference Residential Appendix RA3.

E. REQUIRED FORMS

Forms that will be required during construction are shown in this section.

F. SIGNATURES

1. The person who prepared the CF-1R will sign and complete the fields for their name, company (if applicable), address, phone number, certification information (if applicable), date and signature (may be electronic).
2. The person who is assuming responsibility for the project being built to comply with Title 24, Part 6, will complete the fields for their name, company (if applicable), address, phone number, license number (if applicable), date and signature (may be electronic).

G. REGISTRATION

1. The CF-1R must be registered with a HERS provider prior to submitting for a building permit. See _____.