

DUCT LEAKAGE TEST – COMPLETELY NEW OR REPLACEMENT DUCT SYSTEM

CEC- CF-4R-MECH-20 (Revised 08/09)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF FIELD VERIFICATION AND DIAGNOSTIC TESTING		CF-4R-MECH-20
Duct Leakage Test – Completely New or Replacement Duct System		(Page 1 of 3)
Site Address:	Enforcement Agency:	Permit Number:

Enter the Duct System Name or Identification/Tag:

Enter the Duct System Location or Area Served:

Note: Submit one Installation Certificate for each duct system that must demonstrate compliance in the dwelling.

This certificate is required for compliance for completely new duct systems installed in new dwelling construction, and also for completely new or replacement duct systems in existing dwellings. For existing dwellings, a completely new or replacement duct system can also include existing parts of the original duct system (e.g., register boots, air handler, coil, plenums, etc.) if those parts are accessible and they can be sealed.

Duct Leakage Diagnostic Test – completely new or replacement duct system

Enter a value for the Allowed Leakage (CFM) for the duct system leakage verification. The value entered must be the Verified Low Leakage Ducts in Conditioned Space criteria or one of the three calculated leakage rates described below.

Verified Low Leakage Ducts in Conditioned Space (VLLDCS) Compliance Credit. If compliance credit for verified low leakage ducts in conditioned space is shown in the special features section of the CF-1R, the leakage to outside test method must be used to verify duct leakage (refer to RA3.1.4.3.4), and 25 CFM must be entered for Allowed Leakage.

Allowed Leakage (CFM)

Allowed leakage calculation – (select one calculation method from this section). Use 6% (*leakage factor* = 0.06) for calculations. When utilizing Low Leakage Air Handler (LLAH) credit, the allowed duct leakage may be specified by the CF-1R to be less than 6%, in which case the user-specified leakage rate must be used in the calculations below. For example, if the user-specified leakage (specified as a percentage of fan airflow) is reported on the CF-1R as 3%, then use a *leakage factor* of 0.03 in the calculations below.

 Cooling system method:Nominal capacity of condenser in Tons _____ x 400 x *leakage factor* = _____ (CFM) Heating system method:21.7 x _____ Output Capacity in Thousands of Btu/hr x *leakage factor* = _____ (CFM) Measured airflow method (RA3.3):Enter measured fan flow in CFM here _____ x *leakage factor* = _____ (CFM)Enter value for **Actual** leakage (CFM) in the right column, from measurement using applicable duct leakage pressurization test procedure from Reference Residential Appendix RA3.1(CFM @ 25 Pa).

Actual Leakage (CFM)

List **Actual** Leakage from duct leakage test (CFM)**Pass if Actual Leakage is less than Allowed Leakage** Pass Fail

For complete replacement of duct systems only, if the 6 percent leakage rate criteria cannot be met, a smoke test should be performed to verify that the excess leakage is coming only from the furnace cabinet (air handler cabinet), and not from other *accessible* portions of the duct system. A HERS rater must verify the installation (No sampling allowed). List **Actual** Leakage from smoke test(CFM)

Pass if all accessible leaks (except for existing air handler) are sealed using smoke Pass Fail

DUCT LEAKAGE TEST – COMPLETELY NEW OR REPLACEMENT DUCT SYSTEM

CEC- CF-4R-MECH-20 (Revised 08/09)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF FIELD VERIFICATION AND DIAGNOSTIC TESTING		CF-4R-MECH-20
Duct Leakage Test – Completely New or Replacement Duct System		(Page 2 of 3)
Site Address:	Enforcement Agency:	Permit Number:

- Outside air (OA) ducts for Central Fan Integrated (CFI) ventilation systems, shall not be sealed/taped off during duct leakage testing. CFI OA ducts that utilize controlled motorized dampers, that open only when OA ventilation is required to meet ASHRAE Standard 62.2, and close when OA ventilation is not required, may be configured to the closed position during duct leakage testing.
- All supply and return register boots must be sealed to the drywall.
- New duct installations cannot utilize building cavities as plenums or platform returns in lieu of ducts.
- Mastic and draw bands must be used in combination with Cloth backed, rubber adhesive duct tape to seal leaks at duct connections.

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 the certified HERS rater who performed the verification services identified and reported on this certificate (responsible rater).
- The installed feature, material, component, or manufactured device requiring HERS verification that is identified on this certificate (the installation) complies with the applicable requirements in Reference Residential Appendices RA2 and RA3 and the requirements specified on the Certificate(s) of Compliance (CF-1R) approved by the local enforcement agency.
- The information reported on applicable sections of the Installation Certificate(s) (CF-6R), signed and submitted by the person(s) responsible for the installation conforms to the requirements specified on the Certificate(s) of Compliance (CF-1R) approved by the enforcement agency.

Builder or Installer information as shown on the Installation Certificate (CF-6R)		
Company Name: (Installing Subcontractor or General Contractor or Builder/Owner)		
Responsible Person's Name:	CSLB License:	
HERS Provider Data Registry Information		
Sample Group # (if applicable):	<input type="checkbox"/> tested/verified dwelling	<input type="checkbox"/> not-tested/verified dwelling in a HERS sample group
HERS Rater Information		
HERS Rater Company Name:		
Responsible Rater's Name	Responsible Rater's Signature	

Registration Number: _____ Registration Date/Time: _____ HERS Provider: _____
 2008 Residential Compliance Forms August 2009

DUCT LEAKAGE TEST – COMPLETELY NEW OR REPLACEMENT DUCT SYSTEM



CERTIFICATE OF FIELD VERIFICATION AND DIAGNOSTIC TESTING **CF-4R-MECH-20**

Duct Leakage Test – Completely New or Replacement Duct System **(Page 3 of 3)**

Site Address:	Enforcement Agency:	Permit Number:
---------------	---------------------	----------------

Responsible Rater's Certification Number w/ this HERS Provider:	Date Signed:
---	--------------

SAMPLE FORM
FOR INFORMATION ONLY
NOT FOR SUBMITTAL