

DUCT LEAKAGE TEST – EXISTING DUCT SYSTEM

CEC-CF-6R-MECH-21-HERS (Revised 03/10)

CALIFORNIA ENERGY COMMISSION



INSTALLATION CERTIFICATE		CF-6R-MECH-21-HERS
Duct Leakage Test – Existing Duct System		(Page 1 of 4)
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 installation certificate is required for compliance for alterations and additions in existing dwellings to space conditioning systems and duct systems.

Note: 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. For a completely new or replacement duct system installed in an existing dwelling, use the Installation Certificate titled "Duct Leakage Test – Completely New or Replacement Duct System."

Duct Leakage Diagnostic Test – Existing Duct System

Select one compliance method from the following four choices.

- ☐ Option 1. Measured leakage less than 15% of Fan Airflow.
- ☐ Option 2. Measured leakage to outside less than 10% of Fan Airflow.
- ☐ Option 3. Reduce leakage by 60% or more, and conduct smoke test to seal all accessible leaks.
- ☐ Option 4. Fix all accessible leaks using smoke test, and HERS rater must verify.

Note: (One of Options 1, 2 or 3 must be attempted before utilizing Option 4.)

Determine nominal **Fan Airflow** using one of the following three calculation methods.

- ☐ Cooling system method: Size of condenser in Tons _____ x 400 = _____ CFM
- ☐ Heating system method: 21.7 x _____ Heating Output Capacity (kBtuh) = _____ CFM
- ☐ Measured system airflow using RA3.3 airflow test procedures: _____ CFM

1	Option 1 used then: Allowed leakage = Fan Airflow _____ x 0.15 = _____ CFM Actual leakage = _____ CFM Pass if Actual leakage is less than Allowed leakage	☐ Pass ☐ Fail
2	Option 2 used then: Allowed leakage = Fan Airflow _____ x 0.10 = _____ CFM Actual leakage to outside = _____ CFM Pass if Actual leakage to outside is less than Allowed leakage	☐ Pass ☐ Fail
3	Option 3 used then: Initial leakage prior to start of work = _____ CFM Final leakage after sealing all accessible leaks using smoke test = _____ CFM Initial leakage _____ - Final leakage _____ = Leakage reduction _____ CFM (Leakage reduction _____ / Initial leakage _____) x 100% = % Reduction Pass if % Reduction <u>≥</u> 60%	☐ Pass ☐ Fail

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4	Option 4 used then: All accessible leaks repaired using smoke test. HERS rater must verify (No sampling). Pass if all accessible leaks have been sealed using Smoke Test	☐ Pass ☐ Fail
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- ☐ 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 if smoke test is utilized for compliance – applies to duct leakage compliance option 3 (leakage reduction by 60%) and option 4 (fix all accessible leaks) described above.
- ☐ 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 all new 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 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 understand that a HERS rater will check the installation to verify compliance, and that that if such checking identifies defects, I am required to take corrective action at my expense. I understand that Energy Commission and HERS provider representatives will also perform quality assurance checking of installations, including those approved as part of a sample group but not checked by a HERS rater, and if those installations fail to meet the requirements of such quality assurance checking, the required corrective action and additional checking/testing of other installations in that HERS sample group will be performed at my expense.
- 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.** I will ensure that all Installation Certificates will come from a HERS provider data registry for multiple orientation alternatives, and beginning October 1, 2010, for all low-rise residential buildings.

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):

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Is this installation monitored by a Third Party Quality Control Program (TPQCP)? ☐ Yes ☐ No	Name of TPQCP (if applicable):
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