

DUCT LEAKAGE TEST – EXISTING DUCT SYSTEM



CERTIFICATE OF FIELD VERIFICATION AND DIAGNOSTIC TESTING **CF-4R-MECH-21**

Duct Leakage Test – Existing Duct System **(Page 1 of 3)**

Site Address:	Enforcement Agency:	Permit Number:
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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	<p>Option 1 used then:</p> <p>Allowed leakage = Fan Airflow _____ x 0.15 = _____ CFM</p> <p>Actual leakage = _____ CFM</p> <p style="text-align: center;">Pass if Actual leakage is less than Allowed leakage</p>	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
2	<p>Option 2 used then:</p> <p>Allowed leakage = Fan Airflow _____ x 0.10 = _____ CFM</p> <p>Actual leakage to outside = _____ CFM</p> <p style="text-align: center;">Pass if Actual leakage to outside is less than Allowed leakage</p>	<input type="checkbox"/> Pass <input type="checkbox"/> Fail
3	<p>Option 3 used then:</p> <p>Initial leakage prior to start of work = _____ CFM</p> <p>Final leakage after sealing all accessible leaks using smoke test = _____ CFM</p> <p>Initial leakage _____ - Final leakage _____ = Leakage reduction _____ CFM</p> <p>(Leakage reduction _____ / Initial leakage _____) x 100% = % Reduction</p> <p style="text-align: center;">Pass if % Reduction ≥ 60%</p>	<input type="checkbox"/> Pass <input type="checkbox"/> Fail

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CEC-CF-4R-MECH-21 (Revised 03/10)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF FIELD VERIFICATION AND DIAGNOSTIC TESTING		CF-4R-MECH-21
Duct Leakage Test – Existing Duct System		(Page 2 of 3)
Site Address:	Enforcement Agency:	Permit Number:

4	Option 4 used then: All accessible leaks repaired using smoke test. HERS rater must verify (No sampling). <p style="text-align: center;">Pass if all accessible leaks have been sealed using Smoke Test</p>	<input type="checkbox"/> Pass <input type="checkbox"/> 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 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		

Registration Number: _____ Registration Date/Time: _____ HERS Provider: _____
 2008 Residential Compliance Forms March 2010

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Duct Leakage Test – Existing Duct System **(Page 3 of 3)**

Site Address:	Enforcement Agency:	Permit Number:
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HERS Rater Company Name:	
Responsible Rater's Name	Responsible Rater's Signature
Responsible Rater's Certification Number w/ this HERS Provider:	Date Signed:

SAMPLE FORM
 FOR INFORMATION ONLY
 NOT FOR SUBMITTAL