

**DOCKETED**

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<b>Project Title:</b>	Residential Compliance Manual and Documents
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<b>Submitter Role:</b>	Public Agency
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**DUCT LEAKAGE DIAGNOSTIC TEST**

CEC-CF3R-MCH-20-H (Revised 03/16)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF VERIFICATION		CF3R-MCH-20-H
Duct Leakage Diagnostic Test		(Page 1 of 2)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

A. System Information	
01	Space Conditioning System Identification or Name
02	Space Conditioning System Location or Area Served
03	Building Type from CF1R
04	Verified Low Leakage Ducts in Conditioned Space (VLLDCS) Credit from CF1R?
05	Verified Low Leakage Air-handling Unit Credit from CF1R?
06	Duct System Compliance Category

<b>MCH-20b - Low Leakage Ducts in Conditioned Space</b>
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B. Duct Leakage Diagnostic Test	
01	System compliance with visual inspection per RA3.1.4.1.3?
02	Duct Leakage Test Conditions
03	Duct Leakage Test Method
04	Target Allowable Duct Leakage Rate (cfm)
05	Actual Duct Leakage Rate from Leakage Test Measurement (cfm):
06	Compliance Statement:

C. Additional Requirements for Compliance	
01	System was tested in its normal operation condition. No temporary taping allowed.
02	Outside air (OA) duct connections to the central forced air duct system shall not be sealed/taped off during duct leakage testing. OA ducts used for Central Fan Integrated (CFI) Indoor Air Quality ventilation systems, or Central Fan Ventilation Cooling Systems, that utilize dampers that open only when OA is required and automatically close when OA is not required, may configure the OA damper to the closed position during duct leakage testing.
03	All supply and return register boots were sealed to the drywall.
04	Building cavities were not used as plenums or platform returns in lieu of ducts.
05	If cloth backed tape was used it was covered with Mastic and draw bands.
06	All connection points between the air handler and the supply and return plenums are completely sealed.
07	Verification Status: <ul style="list-style-type: none"> <li><input type="checkbox"/> <u>Pass</u> - all applicable requirements are met; or</li> <li><input type="checkbox"/> <u>Fail</u> - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below; or</li> <li><input type="checkbox"/> <u>All N/A</u> - This entire table is not applicable</li> </ul>
08	Correction Notes:
<p><b>The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met unless otherwise noted in the Verification Status and the Corrections Notes in this table.</b></p>	

D. Determination of HERS Verification Compliance	
All applicable sections of this document shall indicate compliance with the specified verification protocol requirements in order for this Certificate of Verification as a whole to be determined to be in compliance.	
01	

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CERTIFICATE OF VERIFICATION		CF3R-MCH-20-H
Duct Leakage Diagnostic Test		(Page 2 of 2)
Project Name:	Enforcement Agency:	Permit Number:
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**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

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

Documentation Author Name:	Documentation Author Signature:
Company:	Date Signed:
Address:	CEA/HERS Certification Information (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 Verification is true and correct.
- I am the certified HERS Rater who performed the verification identified and reported on this Certificate of Verification (responsible rater).
- The installed features, materials, components, manufactured devices, or system performance diagnostic results that require HERS verification identified on this Certificate of Verification comply with the applicable requirements in Reference Appendices RA2, RA3, and the requirements specified on the Certificate of Compliance for the building approved by the enforcement agency.
- The information reported on applicable sections of the Certificate(s) of Installation (CF2R) signed and submitted by the person(s) responsible for the construction or installation conforms to the requirements specified on the Certificate(s) of Compliance (CF1R) approved by the enforcement agency.
- I will ensure that a registered copy of this Certificate of Verification 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 registered copy of this Certificate of Verification is required to be included with the documentation the builder provides to the building owner at occupancy.

**BUILDER OR INSTALLER INFORMATION AS SHOWN ON THE CERTIFICATE OF INSTALLATION**

Company Name (Installing Subcontractor, General Contractor, or Builder/Owner):	
Responsible Builder or Installer Name:	CSLB License:

**HERS PROVIDER DATA REGISTRY INFORMATION**

Sample Group Number (if applicable):	Dwelling Test Status in Sample Group (if applicable):
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**HERS RATER INFORMATION**

HERS Rater Company Name:	
Responsible Rater Name:	Responsible Rater Signature:
Responsible Rater Certification Number w/ this HERS Provider:	Date Signed:

**CF3R-MCH-20b-H User Instructions****Section A. System Information**

1. *HVAC System Identification or Name*: This field is filled out automatically. It is referenced from the CF2R-MCH-20.
2. *HVAC System Location or Area Served*: This field is filled out automatically. It is referenced from the CF2R-MCH-20.
3. *Building Type*: This field is filled out automatically. It is referenced from the CF2R-MCH-20.
4. *Verified Low Leakage Ducts in Conditioned Space (VLLDCS)*: This field is filled out automatically. It is referenced from the CF2R-MCH-20.
5. *Verified Low Leakage Air-handling Unit (VLLAHU) Credit*: This field is filled out automatically. It is referenced from the CF2R-MCH-20.  
*Duct System Compliance Category*: This field is filled out automatically. It is referenced from the CF2R-MCH-20.

**Section B. – Duct Leakage Diagnostic Test**

1. *System compliance with visual inspection per RA3.1.4.1.2?*: This field will be automatically filled. A visual inspection confirms the space conditioning system is located entirely in conditioned space in accordance with RA3.1.4.1.3. If any part of the duct system is outside of conditioned space, the system does not pass.
2. *Duct Leakage Test Conditions*: This field will be automatically filled. The entire duct system shall be included in the total leakage test. The air handler, supply and return plenums and all the connectors, transition pieces, duct boots and registers must be installed and tested to total system leakage. All supply registers shall be taped so that the tape goes over the grills and attaches to the surrounding drywall. All return grilles except for one large centrally located return grille or the air handler cabinet access panel shall be taped up.
3. *Duct Leakage Test Method*: This field will be automatically filled. Leakage to outside shall be verified by pressurizing the dwelling and the ducts to 25 Pa (0.1 inches of water) **with respect to outside**. A full description of these procedures can be found in RA3.1.4.3.4.
4. *Target Allowable Duct Leakage Rate (cfm)*: This field will be automatically filled. In order to pass this test duct leakage must be equal to or less than 25 cfm when the dwelling and ducts are pressurized to 25 Pa with respect to outside. NOTE: The 25 cfm leakage value will be difficult to reach unless the ducts are located in conditioned space.
5. *Actual Duct Leakage Rate from Leakage Test Measurement (cfm)*: Input the duct leakage rater taken from actual test measurements.
1. *Compliance statement*: This field will be automatically filled. The test passes if actual leakage rate is less than or equal to 25 cfm and a MCH-21 has been registered.

**Section C Additional Requirements for Compliance**

1. This field must be a true statement (or not applicable) for the system to comply.
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5. This field must be a true statement (or not applicable) for the system to comply
6. This field must be a true statement (or not applicable) for the system to comply
7. This field must be a true statement (or not applicable) for the system to comply
8. *Verification Status*: If this Section does not apply, then select "All N/A". If the system meets all of the additional requirements for compliance then select "Pass", otherwise select "Fail". The latter selection means that the system does not meet the requirements and the system will need to be modified to meet the requirements or airflow and fan efficacy will have to be verified by diagnostic testing.
9. *Correction Notes*: If one or more applicable requirements are not met "Fail" will appear in the row above. When this occurs the rater is required to enter detailed notes here that describe what failed and why.

**Section D. Determination of HERS Verification Compliance**

1. This field is filled out automatically. Compliance requires that all individual criteria pass.