



DUCT SURFACE AREA REDUCTION; R-VALUE; BURIED DUCTS COMPLIANCE CREDIT

CALIFORNIA ENERGY COMMISSION

CEC-LMCV-MCH-29-H

SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF VERIFICATION

Note: This table completed by HERS Registry.

Project Name:	Enforcement Agency:
Dwelling Address:	Permit Number:
City and Zip Code:	Permit Application Date:

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

A. Duct System Information

01	Space Conditioning System Name or Identification/Tag	
02	Space Conditioning System Location or Area Served	
03	Indoor Unit Name or Description of Area Served	
04	Status - Duct Surface Area Reduction And R-Value Compliance Credit	
05	Status - Buried Ducts Compliance Credit	
06	Status - Deeply Buried Ducts Compliance Credit	

B. Duct Surface Area Reduction and R-value Compliance Credit

Credit is available for supply duct systems with reduced surface area in unconditioned space with varying combinations of higher performance insulation if the system complies with the following requirements:

01	The duct system design shall be detailed in the special features section of the LMCC-PRF-01-E approved by the enforcement agency.	
02	A duct design layout that conforms to the duct system design details in the special features section of the LMCC-PRF-01-E shall be documented on the building design plans approved by the enforcement agency.	
03	The duct system installation, including duct sizes, R-values, and lengths, and locations of supply & return registers shall conform to the duct system design layout approved by the enforcement agency.	
04	The duct system installation shall be verified by a HERS rater according to the requirements in RA3.1.4.1.4.	
05	The duct system installation shall not have severely twisted or compressed sections that would restrict required operating airflow.	
06	Verification Status:	1. <u>Pass</u> - all applicable requirements are met; or 2. <u>Fail</u> - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below
07	Correction Notes:	

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

Registration Number:

Registration Date/Time:

HERS Provider:

CA Building Energy Efficiency Standards - 2022 Low-Rise Multifamily Compliance

January 2022



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C. Buried Ducts Compliance Credit

Ducts partly or completely buried in blown attic insulation in dwelling units meeting the requirements for verified quality insulation installation may take credit for increased effective duct insulation if the system complies with the following requirements:

01	The duct system design shall be detailed in the special features section of the LMCC-PRF-01-E approved by the enforcement agency.	
02	A duct design layout that conforms to the duct system design details in the special features section of the LMCC-PRF-01-E shall be documented on the building design plans approved by the enforcement agency.	
03	The installed duct system and attic insulation shall conform to the design details in the enforcement agency approved LMCC-PRF-01-E. These installation details include, duct nominal diameter, R-value, and length of each segment, ceiling insulation depth, type (i.e. fiberglass or cellulose), and R-value, and supply and return register locations.	
04	The duct system installation shall be verified by a HERS rater according to the requirements in RA3.1.4.1.5. Verification of duct system installation shall be completed prior to burial of ducts. Verification of insulation installation shall be completed by a second HERS inspection after ducts are buried.	
05	Ducts shall not have severely twisted or compressed sections that would restrict required operating airflow.	
06	Ducts shall be buried by a uniform level of insulation (i.e. no mounding attic insulation to achieve burial level), lay directly or within 3.5 inches of ceiling gypsum board, and have at least 6 inches of space between the duct outer jacket and the roof sheathing.	
07	The dwelling shall comply with all Quality Insulation Installation requirements as documented on the applicable LMCI and LMCV.	
08	Verification Status:	1. <u>Pass</u> - all applicable requirements are met; or 2. <u>Fail</u> - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below
09	Correction Notes:	

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.



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D. Deeply Buried Ducts Compliance Credit

Duct segments meeting the requirements for buried ducts and covered by at least 3.5 inches of insulation can take credit for effective duct insulation levels greater than buried ducts. Deeply buried ducts have the option of using lowered portions of the ceiling or durable containment systems to achieve burial depth greater than the overall attic insulation level. Deeply buried duct systems must comply with the following requirements:

01	The duct system design shall be detailed in the special features section of the LMCC-PRF-01-E approved by the enforcement agency.	
02	A duct design layout that conforms to the duct system design details in the special features section of the LMCC-PRF-01-E shall be documented on the building design plans approved by the enforcement agency.	
03	The installed duct system and attic insulation shall conform to the design details in the enforcement agency approved LMCC-PRF-01-E. These installation details include, duct nominal diameter, R-value, and length of each segment, ceiling insulation depth, type (i.e. fiberglass or cellulose), and R-value, lowered chase or containment system locations, and supply and return register locations.	
04	The duct system installation shall be verified by a HERS rater according to the requirements in RA3.1.4.1.6. Verification of duct system installation shall be completed prior to burial of ducts. Verification of insulation installation shall be completed by a second HERS inspection after ducts are buried.	
05	Ducts shall not have severely twisted or compressed sections that would restrict required operating airflow.	
06	Ducts shall be buried by a uniform level of insulation (i.e. no mounding attic insulation to achieve burial level), lay directly or within 3.5 inches of ceiling gypsum board, and have at least 6 inches of space between the duct outer jacket and the roof sheathing.	
07	The dwelling shall comply with all Quality Insulation Installation requirements as documented on the applicable LMCI and LMCV.	
08	Containment systems shall have walls at least 7 inches wider than the duct outer diameter, extend at least 3.5 inches above the duct jacket, be filled completely with blown insulation, and have the duct centered between the containment walls.	
09	Verification Status:	1. <u>Pass</u> - all applicable requirements are met; or 2. <u>Fail</u> - one or more applicable requirements are not met. Enter reason for failure in corrections notes field below
10	Correction Notes:	

The responsible person's signature on this compliance document affirms that all applicable requirements in this table have been met.

E. Duct System Design Details

01	02	03	04	05	06	07	08	09
Duct Segment Identification	Nominal Diam. (in)	Duct R-value	Length (ft)	Attic Insulation R-value	Attic Insulation Depth (in)	Attic Insulation Type	Containment System or Lowered Chase	Duct Burial Level

F. 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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DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

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

2. 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 (LMCI) signed and submitted by the person(s) responsible for the construction or installation conforms to the requirements specified on the Certificate(s) of Compliance (LMCC) approved by the enforcement agency.
- I understand 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, and I will take the necessary steps to ensure this requirement is accomplished.
- 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.

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:

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

Registration Number:

Registration Date/Time:

HERS Provider:

CA Building Energy Efficiency Standards - 2022 Low-Rise Multifamily Compliance

January 2022

CERTIFICATE OF VERIFICATION – USER INSTRUCTIONS	LMCV-MCH-29-H
Supply Duct Compliance Credits - Location; Surface Area; R-value	(Page 1 of 2)

LMCV-MCH-29-H User Instructions

Section A. Duct System Information

1. *System Identification or Name*: This field is filled out automatically. It is referenced from the LMCI-MCH-01, which must be completed prior to this document.
2. *System Location or Area Served*: This field is filled out automatically. It is referenced from the LMCI-MCH-01, which must be completed prior to this document.
3. *Indoor Unit Name*: This field is filled out automatically. It is referenced from the LMCI-MCH-01, which must be completed prior to this document.
4. *Status – Duct Surface Area Reduction and R-Value Compliance Credit*: This field is auto filled from the LMCI-MCH-29 indicating if the credit is being used. If not, then “N/A” will be displayed.
5. *Status – Buried Ducts Compliance Credit*: This field is auto filled from the LMCI-MCH-29 indicating if the credit is being used. If not, then “N/A” will be displayed.
6. *Status – Deeply Buried Ducts Compliance Credit*: This field is auto filled from the LMCI-MCH-29 indicating if the credit is being used. If not, then “N/A” will be displayed.

Section B. Duct Surface Area Reduction and R-value Compliance Credit

1. This field must be a true statement (or not applicable) for the system to comply.
2. This field must be a true statement (or not applicable) for the system to comply.
3. This field must be a true statement (or not applicable) for the system to comply.
4. This field must be a true statement (or not applicable) for the system to comply.
5. This field must be a true statement (or not applicable) for the system to comply.
6. *Verification Status*: If the system meets the criteria for *Duct Surface Area Reduction and R-value Compliance Credit* then select “Pass”, otherwise select “Fail”. The latter selection means that the system does not meet the requirements and the LMCC will have to be revised, or the system will need to be modified to meet the requirements.
7. *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 C. Buried Ducts Compliance Credit

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 the system meets the criteria for *Buried Ducts Compliance Credit* then select “Pass”, otherwise select “Fail”. The latter selection means that the system does not meet the requirements and the LMCC will have to be revised, or the system will need to be modified to meet the requirements.
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.

CERTIFICATE OF VERIFICATION – USER INSTRUCTIONS	LMCV-MCH-29-H
Supply Duct Compliance Credits - Location; Surface Area; R-value	(Page 2 of 2)

Section D. Deeply Buried Ducts Compliance Credit

1. This field must be a true statement (or not applicable) for the system to comply.
2. This field must be a true statement (or not applicable) for the system to comply.
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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. This field must be a true statement (or not applicable) for the system to comply.
9. *Verification Status:* If the system meets the criteria for *Deeply Buried Ducts Compliance Credit* then select “Pass”, otherwise select “Fail”. The latter selection means that the system does not meet the requirements and the LMCC will have to be revised, or the system will need to be modified to meet the requirements.
10. *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 E. Duct System Design Details

This table list is calculated field: table copied from LMCC-PRF-01

1. Reference information from LMCC-PRF-01.
2. Reference information from LMCC-PRF-01.
3. Reference information from LMCC-PRF-01.
4. Reference information from LMCC-PRF-01.
5. Reference information from LMCC-PRF-01.
6. Reference information from LMCC-PRF-01.
7. Reference information from LMCC-PRF-01.
8. Reference information from LMCC-PRF-01.
9. Reference information from LMCC-PRF-01.

Section F. Determination of HERS Verification Compliance

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

Documentation Declaration Statements

1. The person who prepared the LMCV will sign and complete the fields for their name, company (if applicable), address, phone number, certification information (if applicable), date and signature.
2. The person who is assuming responsibility for the project being built to comply with Title 24, Part 6, will complete the fields (if applicable) for their company, responsible builder or installer name, CSLB license number, sample group number, dwelling test status in sample group, HERS Rater company name, HERS Rater name, HERS Rater signature, HERS Rater certification number and date signed.