



SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

CERTIFICATE OF INSTALLATION

Note: This table completed by HERS Registry.

Table with 2 columns: Field Name (Project Name, Dwelling Address, City and Zip Code) and Value (Enforcement Agency, Permit Number, Permit Application Date)

A. Ducted Cooling System Information

Table with 3 columns: ID (01-12), Description (System Identification, Location, Unit Name, etc.), and Value

B. Fan Watt Measurement Apparatus and Procedure Information

Instrument Specifications are given in RA3.3.1, and system fan watt measurement apparatus information is given in RA3.3.2.2.

Table with 3 columns: ID (01), Description (Fan Watt Verification Device Used), and Value

MCH-22d Forced Air System Fan Efficacy Measurement – Newly Installed Zoned Single-Speed Compressor Systems with Central Fan Ventilation Cooling

C. Forced Air System Fan Efficacy Measurement – All Zones Calling

The procedures for System Fan Watt Verification are specified in Reference Residential Appendix RA3.3.

Table with 3 columns: ID (01-05), Description (Actual Tested Watts, Airflow, Required Efficacy, etc.), and Value



SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

D. Forced Air System Fan Efficacy Measurement – All Zonal Control Modes

The procedures for System Fan Efficacy Verification are specified in Reference Residential Appendix RA3.3.

Note: For compliance with verification in all zonal control modes, it is sufficient to verify fan efficacy for operation of each individual zone when the individual zone is the sole zone calling for conditioning. It is not necessary to verify fan efficacy for combinations of 2 or more zones that are less than all zones calling (e.g., 2 out of three zones calling).

Table with 6 columns: 01 (Number of Independently Controlled Zones), 02 (Required Fan Efficacy in All Zonal Control Modes), 03 (Zone Name), 04 (Zone Description), 05 (Measured Watt Draw with all Other Zones Off), 06 (Measured Airflow with all Other Zones Off), 07 (Calculated Fan Efficacy), 08 (Zone Compliance Status), 09 (Compliance Statement).

E. Central Fan Ventilation Cooling System Fan Efficacy Measurement

The procedures for Central Fan Ventilation Cooling System Fan Watt Verification are specified in Reference Residential Appendix RA3.3.4.

Table with 2 columns: 01 (Actual Tested Watts), 02 (Actual Tested Ventilation Airflow from MCH-23), 03 (Required Fan Efficacy), 04 (Actual Fan Efficacy), 05 (Compliance Statement).

F. Additional Requirements

Table with 2 columns: 01-07 (List of additional requirements for fan efficacy measurement).

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



SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

DOCUMENTATION AUTHOR'S DECLARATION STATEMENT

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

Table with 2 columns: Documentation Author Name, Documentation Author Signature, Documentation Author Company Name, Date Signed, Address, CEA/HERS Certification Identification, 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:

- 1. The information provided on this certificate of installation is true and correct.
2. I am either: a) a responsible person eligible under division 3 of the business and professions code...
3. The constructed or installed features, materials, components or manufactured devices...
4. I understand that a HERS rater will check the installation to verify compliance...
5. I understand that a registered copy of this certificate of installation shall be posted...
6. I understand that a registered copy of this certificate of installation is required to be included...

Table with 2 columns: Responsible Builder/Installer Name, Responsible Builder/Installer Signature, Company Name, Position With Company, Address, CSLB License, City/State/Zip, Phone, Date Signed, Third Party Quality Control Program Status, Name of TPQCP.

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

CERTIFICATE OF INSTALLATION – DATA FIELD DEFINITIONS AND CALCULATIONS	LMCI-MCH-22-H
Space Conditioning System Fan Efficacy	(Page 1 of 3)

LMCI-MCH-22d-H User Instructions

Section A. Ducted Cooling System Information

1. *System Identification or Name*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, 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-23, 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-23, which must be completed prior to this document.
4. *System Installation Type*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
5. *Nominal Cooling Capacity (tons) of Condenser*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
6. *Condenser Speed Type*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
7. *Cooling System Zonal Control Type*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
8. *Central Fan Integrated (CFI) Ventilation System Status*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
9. *System Bypass Duct Status*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
10. *Date of System Airflow Rate Measurement*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
11. *Airflow Rate Protocol utilized*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
12. *Central Fan Ventilation Cooling System Status*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.

Section B. Fan Watt Measurement Apparatus and Procedure Information

1. *Fan Watt Verification Device Used*: If the device used to measure fan watts was a portable watt meter then select “Portable Watt Meter”. This can include plug-in devices such as a “Watts-Up” meter, or a “Kill-a-Watt” meter, or a clamp-on type meter that reads true power watts directly (must account for power factor – multiplying amps x volts is not adequate).

Section C. Forced Air System Fan Efficacy Measurement – All Zones Calling

1. *Actual Tested Watts*: Enter the number of watts tested using the device specified in Section B and tested with all zones calling for cooling simultaneously.
2. *Actual Tested Airflow from MCH-23 (cfm)*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
3. *Required Fan Efficacy (watts/cfm)*: This field is filled out automatically and referenced from MCH-01. Values below are used unless higher efficacy values are listed on the LMCC for performance compliance.
 - a. 0.62 watts/cfm for small duct high velocity HP or AC systems
 - b. 0.45 watts/cfm for central gas furnace or packaged gas furnace systems
 - c. 0.58 watts/cfm for all other systems

CERTIFICATE OF INSTALLATION – DATA FIELD DEFINITIONS AND CALCULATIONS	LMCI-MCH-22-H
Space Conditioning System Fan Efficacy	(Page 2 of 3)

4. *Actual Fan Efficacy (watts/cfm)*: This field is filled out automatically. It is calculated by dividing the actual tested watts by the actual tested airflow.
5. *Compliance Statement*: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy.

Section D. Forced Air System Fan Efficacy Measurement – All Zonal Control Modes

1. *Number of Independently Controlled Zones*: Enter the number of independently controlled zones.
2. *Required Fan Efficacy (Watts/cfm)*: This field is filled out automatically and referenced from MCH-01. Values below are used unless higher efficacy values are listed on the LMCC for performance compliance.
 - a. 0.62 watt/cfm for small duct high velocity HP or AC systems
 - b. 0.45 watt/cfm for central gas furnace or packaged gas furnace systems
 - c. 0.58 watt/cfm for all other systems
3. *Zone Name*: Enter a unique name for each independent zone.
4. *Zone Description*: Enter a description of the zone (e.g. upstairs, downstairs).
5. *Measured Watt Draw with All Other Zones Off*: Enter the number of watts tested using the device specified in Section B and tested with all other zones off.
6. *Measured Airflow with All Other Zones Off*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
7. *Calculated Fan Efficacy*: This field is filled out automatically. It is calculated by dividing the measured watt draw by the measured airflow.
8. *Zone Compliance Status*: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy for this zone.
9. *Compliance Statement*: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy for all zones tested.

Section E. Central Fan Ventilation Cooling System Fan Efficacy Measurement

1. *Actual Tested Watts*: Enter the number of watts tested using the device specified in Section B and tested at ventilation cooling airflow rate.
2. *Actual Tested Ventilation Airflow from MCH-23*: This field is filled out automatically. It is referenced from the LMCI-MCH-23, which must be completed prior to this document.
3. *Required Fan Efficacy*: This field is filled out automatically and referenced from MCH-01. Values below are used unless higher efficacy values are listed on the LMCC for performance compliance.
 - a. 0.62 watt/cfm for small duct high velocity HP or AC systems
 - b. 0.45 watt/cfm for central gas furnace or packaged gas furnace systems
 - c. 0.58 watt/cfm for all other systems
4. *Actual Fan Efficacy*: This field is filled out automatically. This is calculated by dividing the measured watt draw by the measured airflow.
5. *Compliance Statement*: This field is filled out automatically. The result is based on whether or not the actual fan efficacy meets the required fan efficacy for all zones tested.

Section F. Additional Requirements

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.

CERTIFICATE OF INSTALLATION – DATA FIELD DEFINITIONS AND CALCULATIONS	LMCI-MCH-22-H
Space Conditioning System Fan Efficacy	(Page 3 of 3)

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. 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.

Documentation Declaration Statements

1. The person who prepared the LMCI 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 for their name, company (if applicable), address, phone number, license number (if applicable), date and signature.

For information and data collection only. Not valid until registered with a HERS provider