

**CERTIFICATE OF INSTALLATION**

This Certificate of Installation documents the installation of electrical power distribution system features, materials, components, and manufactured devices required to demonstrate compliance with Title 24, Part 6 per §10-103(a)3 for nonresidential, hotel/motel and high-rise residential occupancies.

| Field Name | Data Entry | Field Name | Data Entry |
|-------------------|------------|-------------------------|------------|
| Project Name | | Enforcement Agency | |
| Dwelling Address | | Permit Number | |
| City and Zip Code | | Permit Application Date | |

A. Ducted Cooling System Information

| Field | Field Name | Data Entry |
|-------|--|------------|
| 01 | Space Conditioning System Identification or Name | |
| 02 | Space Conditioning System Description of Area Served | |
| 03 | Indoor Unit Name | |
| 04 | System Installation Type | |
| 05 | Nominal Cooling Capacity (tons) | |
| 06 | Condenser Speed Type | |
| 07 | Cooling System Zonal Control Type | |
| 08 | Central Fan Integrated (CFI) Ventilation System Status | |
| 09 | System Bypass Duct Status | |
| 10 | Date of System Airflow Rate Measurement | |
| 11 | Airflow Rate Protocol Utilized | |
| 12 | Central Fan Ventilation Cooling System Status | |



B. Hole for the Placement of a Static Pressure Probe (HSPP), and Permanently Installed Static Pressure Probe (PSPP) in the Supply Plenum

Procedures for installing HSPP or PSPP are specified in RA3.3.1.1.

| Field | Field Name | Data Entry |
|-------|--|------------|
| 01 | Method Used to Demonstrate Compliance with the HSPP/PSPP Requirement | |

C. Airflow Rate Measurement Apparatus and Procedure Information

Instrument Specifications are given in RA3.3.1.1, and system airflow rate measurement apparatus information is given in RA3.3.2.

| Field | Field Name | Data Entry |
|-------|---|------------|
| 01 | Airflow Rate Measurement Type Used for this Airflow Rate Verification | |
| 02 | Manufacturer of Airflow Measurement Apparatus | |
| 03 | Model Number of Airflow Measurement Apparatus | |
| 04 | Certification Status of the Airflow Measurement Apparatus Accuracy | |



MCH-23c Forced Air System Airflow Rate Measurement – Alternative to Compliance with Minimum System Airflow Requirements for Altered Systems

D. Alternative to Compliance with Minimum System Airflow Requirements for Altered Systems

The installer shall attempt to correct non-compliant system airflow rates by performing the following remedial actions as specified in RA3.3.3.1.5

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

| Field | Field Name | Data Entry |
|-------|---|------------|
| 01 | Determine that the air filter media is clean. If the air filter media is dirty, then replace it with clean filter media. | |
| 02 | Open all registers and dampers and remove any obstructions. | |
| 03 | Replace/Repair all accessible crushed, blocked, restricted, remove excess length, and sharp bends in ducts. Supported every 4 ft max. with a max. 2 in sag. | |
| 04 | Clean the evaporator coil according to the manufacturer and ensure the coil is not obstructed. | |
| 05 | Air handler fan speed set to high and blower wheel and motor are operating properly. | |
| 06 | If determined to be too small, replace the return duct with a larger one and/or add a second return duct. | |
| 07 | If determined to be too small, replace the return grille with a larger area grille. | |
| 08 | If any of the above were not completed list the Action Required and a description of why the action could not be completed | |

**E. Forced Air System Airflow Rate Measurement - Best Airflow Rate Attainable**

The procedures for System Airflow Rate Verification are specified in Reference Residential Appendix RA3.3.

| Field | Field Name | Data Entry |
|-------|--|------------|
| 01 | Required Minimum System Airflow Rate (cfm/ton) | |
| 02 | Required Minimum System Airflow Target (cfm) | |
| 03 | Actual System Airflow Rate Measurement (cfm) | |
| 04 | Compliance Statement | |
| 05 | HERS Sample Group Eligibility | |

**F. Additional Requirements**

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

| Field | Field Name |
|-------|---|
| 01 | Air filters that meet the applicable requirements of Standards Section 150.0(m)12 or 150.0(m)13 were properly installed in the system during system airflow rate measurement identified on this Certificate of Installation. |
| 02 | The airflow rate measurement apparatus used to perform the airflow rate measurement identified on this Certificate of Installation was calibrated in accordance with the apparatus manufacturer's specifications and conforms to the instrumentation specifications given in RA3.3.1. |
| 03 | A visual inspection shall confirm that bypass ducts that deliver conditioned supply air directly to the space conditioning system return duct airflow are not used on <u>newly constructed</u> zonally controlled systems unless the Performance Certificate of Compliance indicates an allowance for use of a bypass duct. When a bypass duct is accounted for on the Performance Certificate of Compliance, the airflow rate shall conform to the specifications listed on the Certificate of Compliance. |
| 04 | All registers were fully open during the diagnostic test. |
| 05 | System fan was set at maximum speed during the diagnostic test. |
| 06 | If fresh air duct is part of the HVAC system it was not closed during the diagnostic test. |
| 07 | Airflow rate and fan watt draw shall be simultaneous measurements when used to calculate the Fan Efficacy tested value. |
| 08 | Multi-speed compressor space cooling systems or variable speed compressor systems shall verify airflow (cfm/ton) and fan efficacy (Watt/cfm) with system operating in cooling mode at the maximum compressor speed and the maximum air handler fan speed. |
| 09 | For altered systems that do not comply with the minimum 300 cfm per ton airflow rate requirement but opt to comply using the remedial actions on this MCH-23 compliance document according to Section RA3.3.3.1.5, the system's thermostat shall conform to the specifications in Reference Joint Appendix JA5 and shall be capable of receiving and responding to Demand Response Signals prior to final approval of the building permit by the enforcing agency (Section 150.2(b)1Fia). |

**DOCUMENTATION AUTHOR'S DECLARATION STATEMENT**

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

| Field Name | Entry |
|---|-------|
| Documentation Author Name | |
| Documentation Author Signature | |
| Documentation Author Company Name | |
| Date Signed | |
| Address | |
| CEA/HERS Certification Identification (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:
1. The information provided on this Certificate of Installation is true and correct.
 2. I am eligible under Division 3 of the Business and Professions Code in the applicable classification to accept responsibility for the system design, construction, or installation of features, materials, components, or manufactured devices for the scope of work identified on this Certificate of Installation and attest to the declarations in this statement (responsible builder/installer), otherwise I am an authorized representative of the responsible builder/installer.
 3. The constructed or installed features, materials, components or manufactured devices (the installation) identified on this Certificate of Installation conforms to all applicable codes and regulations, and the installation conforms to the requirements given on the plans and specifications approved by the enforcement agency.
 4. I reviewed a copy of the Certificate of Compliance approved by the enforcement agency that identifies the specific requirements for the scope of construction or installation identified on this Certificate of Installation, and I have ensured that the requirements that apply to the construction or installation have been met.
 5. I understand that a completed signed copy of this Certificate of Installation 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 accomplish this requirement.
 6. I understand that a completed signed copy of this Certificate of Installation is required to be included with the documentation the builder provides to the building owner at occupancy, and I will take the necessary steps to accomplish this requirement.

SPACE CONDITIONING SYSTEM AIRFLOW RATE



CALIFORNIA ENERGY COMMISSION

CEC-NRCI-MCH-23-F

| Field Name | Entry |
|--|-------|
| Responsible Builder/Installer Name | |
| Responsible Builder/Installer Signature | |
| Company Name (Installing Subcontractor or General Contractor or Builder/Owner) | |
| Position With Company (Title) | |
| Address | |
| CSLB License | |
| City/State/Zip | |
| Phone | |
| Date Signed | |

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