SAMPLE FORM – NOT VALID FOR SUBMISSION TO BUILDING DEPARTMENTS

Title 24, Part 6, Section 160.2(b)2 **Ventilation and Indoor Air Quality for Attached Dwelling Units.** All dwelling units shall meet the requirements of ASHRAE Standard 62.2, Ventilation and Acceptable Indoor Air Quality in Residential Buildings, subject to the amendments specified in Section 160.2(b)2A.

CERTIFICATE OF INSTALLATION

Note: This table completed by HERS Registry.

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

A. Local Mechanical Exhaust - General Information

01	Dwelling Unit Name	
02	Building Type	
03	Total Kitchen Floor Area	
04	Kitchen Average Ceiling Height	
05	Kitchen Total Conditioned Volume	
06	Kitchen Type	
07	Dwelling Unit Total Floor Area	
08	Kitchen Range (Cooking Stove) Fuel Type	

B. Local Mechanical Exhaust System (*Section 160.2(b)2Avi*) – Fan Selection and Duct Design Criteria for Compliance

Local mechanical exhaust fans shall be installed in each kitchen and bathroom in accordance with Section 160.2(b)2Avi. Systems shall be rated for airflow in accordance with ASHRAE 62.2 section 7.1. Delivered local ventilation rates:

- *All local ventilation rates have been measured using a flow hood, flow grid, or other airflow measuring device and meet the requirements of Tables 160.2-E, 160.2-F, or 160.2-G; OR*
- *The airflow rating at a pressure of 0.25 in. w.c. of a certified fan is assumed because the local ventilation system duct sizing meets the prescriptive requirements of Table 160.2-H.*

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Table 160.2-E
Demand-Controlled Local Ventilation Exhaust Airflow Rates and Capture Efficiency

Application	Airflow
Enclosed Kitchen or Nonenclosed Kitchen	Vented range hood, including appliance-range hood combinations shall meet either the capture efficiency (CE) or the airflow rate specified in Table 160.2-G as applicable.
Enclosed Kitchen	Other kitchen exhaust fans, including downdraft: 300 cfm or a capacity of 5 ACH
Nonenclosed Kitchen	Other kitchen exhaust fans, including downdraft: 300 cfm
Bathroom	50 cfm

Table 160.2-F
Continuous Local Ventilation Exhaust Airflow Rates

Application	Airflow
Enclosed kitchen	5 ach, based on kitchen volume
Bathroom	20 cfm

Table 160.2-G
Kitchen Range Hood Airflow Rates (cfm) and ASTM E3087 Capture Efficiency (CE) Ratings According to Dwelling Unit Floor Area and Kitchen Range Fuel Type

Dwelling Unit Floor Area (ft^2)	Hood Over Electric Range	Hood Over Natural Gas Range
>1500	50% CE or 110 cfm	70% CE or 180 cfm
>1000 - 1500	50% CE or 110 cfm	80% CE or 250 cfm
750 - 1000	55% CE or 130 cfm	85% CE or 280 cfm
<750	65% CE or 160 cfm	85% CE or 280 cfm

Table 160.2-H
Prescriptive Ventilation System Duct Sizing

Fan Airflow Rating, CFM at minimum static pressure of 0.25 in. water	≤50 (25)	≤80 (40)	≤100 (50)	≤125 (60)	≤150 (70)	≤175 (85)	≤200 (95)	≤250 (120)	≤350 (165)	≤400 (190)	≤450 (210)	≤700 (330)	≤800 (380)
Duct Type	**Minimum Duct Diameter, in. (mm) [a,b]**												
Rigid duct	4[e] (100)	5 (125)	5 (125)	6 (150)	6 (150)	7 (180)	7 (180)	8 (205)	9 (230)	10 (255)	10 (255)	12 (305)	12 [d] (305)
Flex duct [c]	4 (100)	5 (125)	6 (150)	6 (150)	7 (150)	7 (180)	8 (205)	8 (205)	9 (230)	10 (255)	NP	NP	NP

a. For noncircular ducts, calculate the diameter as four times the cross-sectional area divided by the perimeter.
b. NP = application of the prescriptive table is not permitted for this scenario.
c. Use of this table for verification of flex duct systems requires flex duct to be fully extended and any flex duct elbows to have a minimum bend radius to duct diameter ratio of 1.0.
d. For this scenario, use of elbows is not permitted.

e. For this scenario, 4 in. (100 mm) oval duct shall be permitted, provided the minor axis of the oval is greater than or equal to 3 in. (75 mm)
f. When a vented range hood utilizes a capture efficiency rating to demonstrate compliance with 150.0(o)1Giiib, a static pressure greater than or equal to 0.25 in. of water at the rating point shall not be required, and the airflow listed in the approved directory corresponding to the compliant capture efficiency rating point shall be applied to Table 150.0-H for determining compliance.

C. Kitchen Exhaust Systems

01	02	03	04	05	06	07	08	09a	09	10a	10	11	12
System Name	Manufacturer Name	System Type	HVI or AHAM Directory Listed Model Number	HVI or AHAM Directory Listed Rated Airflow	HVI or AHAM Directory Listed Sound Rating	Minimum Airflow (defaults to rated airflow)	Operation Schedule	Method of Compliance	Required Minimum Ventilation Rate	Exception to Maximum Sound Rating	Maximum Sound Rating	Compliance Statement for Airflow	Compliance Statement for Sound

D. Continuous Kitchen Exhaust

01	Total Continuous Ventilation Airflow	
02	Required Minimum Continuous Ventilation Airflow	
03	Compliance Statement	

D2. Kitchen Range Hood Capture Efficiency Option

01	Manufacturer Name	
02	CEC-Approved Directory Listed Model Number	
03	CEC-Approved Directory Listed Rated Capture Efficiency	
04	Required Minimum Capture Efficiency (*Table 160.2-G*)	
05	Compliance Statement	

E. Other Requirements

The items listed below correspond to the information given in Section160.2(b)2Avi. Refer also to Chapter 4.6 of the Residential Compliance Manual for information describing these requirements in more detail. The signature of the Responsible Person in the declaration statement below certifies that the building complies with these requirements if applicable.

01	Demand control exhaust systems shall be provided with at least one of the following: 1. A readily accessible occupant-controlled on-off control. 2. An automatic control that does not impede occupant on control.
02	Nonenclosed kitchens shall be provided with a demand-controlled mechanical exhaust system.
03	Each continuous mechanical exhaust system shall be provided with a readily accessible manual on-off control. (Multifamily dwellings are exempt from readily accessible requirement.)
04	Continuous mechanical exhaust systems shall be designed to operate during all occupiable hours.
05	Exhaust fans in separate dwelling units shall not share a common exhaust duct. Exhaust inlets from more than one dwelling unit may be served by a single exhaust fan downstream of all the exhaust inlets if the fan is designated and intended to run continuously or if each inlet is equipped with a back-draft damper to prevent cross-contamination when the fan is not running.

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

LOCAL MECHANICAL EXHAUST

CALIFORNIA ENERGY COMMISSION

CEC-LMCI-MCH-32-H

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.

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 either: a) a responsible person 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, or b) I am an authorized representative of the responsible person and attest to the declarations in this statement on the responsible person's behalf.
    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 certificate of compliance, plans, and specifications approved by the enforcement agency.
    4. I understand that a HERS rater will check the installation to verify compliance and if such checking determines the installation fails to comply, I am required to offer any necessary corrective action at no charge to the building owner.
    5. I understand that a registered 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 ensure this requirement is accomplished.
    6. I understand that a registered 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 ensure this requirement is accomplished.

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:
Third Party Quality Control Program (TPQCP) Status:	Name of TPQCP (if applicable):	

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

LMCI-MCH-32-H User Instructions

Section A. Local Mechanical Exhaust - General Information

1. Dwelling Unit Name: This field is filled out automatically and referenced from the MCH-01
2. Building Type: This field is filled out automatically and referenced from the LMCC.
3. Total Kitchen Floor Area: Enter the total floor area for an enclosed kitchen or N/A for a non-enclosed kitchen.
4. Kitchen Average Ceiling Height: Enter the kitchen ceiling height for an enclosed kitchen or N/A for a non-enclosed kitchen.
5. Kitchen Total Conditioned Volume: This field is filled out automatically and calculated based on the kitchen area and ceiling height.
6. Kitchen Type: Enter the type of kitchen (enclosed or non-enclosed).
7. Dwelling Unit Total Floor Area: This field is filled out automatically and referenced from the MCH-01.
8. Kitchen Range Fuel Type: Select the fuel type of the kitchen range.

Section C. Kitchen Exhaust System

1. System Name: Enter a unique name for the kitchen exhaust system
2. Manufacturer Name: Enter manufacturer name for the kitchen exhaust system.
3. System Type: Select the type of kitchen exhaust system. Options are vented range hood, downdraft, and other.
4. HVI or AHAM Directory Listed Model Number: Enter the kitchen exhaust system model number matching the installed equipment and HVI or AHAM directory.
5. HVI or AHAM Directory Listed Rated Airflow: Enter the rated airflow listed in the HVI or AHAM directory for the above model number.
6. HVI or AHAM Directory Listed Sound Rating: Enter the sound rating listed in the HVI or AHAM directory for the above model number.
7. Minimum Airflow (defaults to rated airflow): Defaults to rated airflow from HVI directory, but editable if exhaust system minimum airflow rate is less than HVI listed value.
8. Operation Schedule: Select the kitchen exhaust system operation schedule. Options are demand control and continuous.

9a. Method of Compliance: Select the method of compliance. Options are airflow and capture efficiency.

9. Required Minimum Ventilation Rate (if demand controlled): This field is filled out automatically and is calculated based on the system operation schedule and type, and kitchen type and volume, and Table 160.2-E and Table 160.2-G. This field is only used for demand control exhaust systems. Continuous exhaust required minimum ventilation rate is determined in Section D.

10a. Exception to Maximum Sound Rating: User select: No Exception or Remote mounted fan with min. 4-ft of duct between fan and intake grille.

10. Maximum Sound Rating: This field is filled out automatically and is calculated based the system operation schedule and minimum airflow.
11. Compliance Statement for Airflow: This field is filled out automatically based on the installed system listed airflow rate and minimum required ventilation rate. This field only determines compliance using airflow ratings for demand-controlled kitchen exhaust systems. Continuous system ventilation rate compliance is determined in Section D. Vented range hoods utilizing the capture efficiency rating for compliance is determined in Section E.

12. Compliance Statement for Sound. This field is filled out automatically based on the installed system listed sound rating and maximum sound rating allowed.

Section D. Continuous Kitchen Exhaust

1. Total Continuous Ventilation Airflow: This field is filled out automatically and is equal to the sum of the listed airflow for all continuously operated kitchen exhaust systems.
2. Required Minimum Continuous Ventilation Airflow: This field is filled out automatically and is equal to five times the enclosed kitchen volume.
3. Compliance Statement: This field is filled out automatically and is based on the total installed continuous ventilation airflow and the required minimum continuous ventilation airflow.

Section D2. Kitchen Range Hood Capture Efficiency Option

Note: This table is used only when complying with local exhaust requirements by utilizing the capture efficiency rating instead of the airflow rating.

1. Manufacturer Name: Enter manufacturer name for the kitchen range hood.
2. CEC-Approved Directory Listed Model Number: Enter the kitchen range hood model number matching the installed equipment and a CEC-approved directory listing.
3. CEC-Approved Directory Listed Rated Capture Efficiency: Enter the rated capture efficiency in the CEC-approved directory for the above model number.
4. Required Minimum Capture Efficiency: This field is filled out automatically and is determined by the dwelling unit square footage, kitchen range fuel type, and Table 160.2-G.
5. Compliance Statement. This field is filled out automatically based on the installed system listed capture efficiency rating and required minimum capture efficiency.

Section E. Other 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.
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.

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.