

**LOCAL MECHANICAL EXHAUST**

CEC-NRCV-MCH-32-H (Revised 01/19)

CALIFORNIA ENERGY COMMISSION



CERTIFICATE OF VERIFICATION		NRCV-MCH-32-H
Local Mechanical Exhaust		(Page 1 of 3)
Project Name:	Enforcement Agency:	Permit Number:
Dwelling Address:	City:	Zip Code:

Title 24, Part 6, Section 150.0(o) **Ventilation for Indoor Air Quality**. All dwelling units shall meet the requirements of ANSI/ASHRAE Standard 62.2. Ventilation and Acceptable Indoor Air Quality in Low-Rise Residential Buildings. **Equation and table numbering on this form corresponds to the numbering for that information in the published ANSI/ASHRAE Standard 62.2-2010.**

**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	

**B. Local Mechanical Exhaust System – Fan Selection and Duct Design Criteria for Compliance**

Local mechanical exhaust fans shall be installed in each kitchen and bathroom. *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 62.2 Tables 5.1 or 5.2; 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 62.2 Table 5.3, or manufacturer's design criteria.

**Table 5.1****Intermittent Local Ventilation Exhaust Airflow Rates**

Application	Airflow	Notes
Kitchen	100 cfm	Vented range hood (including appliance-range hood combinations)
	300 cfm or 5 ACH capacity	Other kitchen exhaust fans, including downdraft
Bathroom	50 cfm	

**Table 5.2****Continuous Local Ventilation Exhaust Airflow Rates**

Application	Airflow	Notes
Kitchen	5 ACH	Based on kitchen volume
Bathroom	20 cfm	

**Table 5.3****Prescriptive Duct Sizing Requirements**

Duct Type	Flex Duct				Smooth Duct			
	50	80	100	125	50	80	100	125
Maximum Allowable Duct Length (ft)								
Diameter, (in)	Flex Duct				Smooth Duct			
3	X	X	X	X	5	X	X	X
4	70	3	X	X	105	35	5	X
5	NL	70	35	20	NL	135	85	55
6	NL	NL	125	95	NL	NL	NL	145
7 and above	NL	NL	NL	NL	NL	NL	NL	NL

This table assumes no elbows. Deduct 15 ft of allowable duct length for each turn, elbow, or fitting. Interpolation and extrapolation in 62.2 Table 5.3 is not allowed. For airflow values not listed, use the next higher value. This table is not applicable for airflow > 125 cfm.

NL = no limit on duct length of this size.

X = not allowed, any length of duct of this size with assumed turns, elbows, fittings will exceed the rated pressure drop.



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C. Kitchen Exhaust System	
01	Manufacturer Name
02	System Type
03	HVI Directory Listed Model Number
04	HVI Directory Listed Rated Airflow
05	HVI Directory Listed Sound Rating
06	Minimum Airflow (if different than rated airflow)
07	Operation Schedule
08	Required Minimum Ventilation Rate
09	Maximum Sound Rating
10	Compliance Statement

D. Other Requirements	
<i>The items listed below correspond to the information given in ASHRAE 62.2. 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.</i>	
01	Each demand control exhaust system shall be provided with a readily accessible manual on-off control.
02	Automatic control devices must not impede manual on-off operation. (Multifamily dwellings can override manual off control, but must not override manual on control.)
03	Permitted automatic control devices include, but are not limited to: humidity sensors, shut-off timers, occupancy sensors, multiple speed fans, combined switching, IAQ sensors, etc.
04	Each continuous mechanical exhaust system shall be provided with a readily accessible manual on-off control. (Multifamily dwellings are exempt from readily accessible requirement.)
05	Continuous mechanical exhaust systems shall be designed to operate during all occupiable hours.
06	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.
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
<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>	

E. 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	If Compliance Statement C10 = "Kitchen Exhaust System Complies" and Verification Status D07 = "Pass", Then display: "Complies: All specified verification protocol requirements on this document are met"; else display: "Does not comply: One or more specified verification protocol requirements on this document are not met">>



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<b>DOCUMENTATION AUTHOR'S DECLARATION STATEMENT</b>	
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:
<b>RESPONSIBLE PERSON'S DECLARATION STATEMENT</b>	
I certify the following under penalty of perjury, under the laws of the State of California:	
<ol style="list-style-type: none"> <li>The information provided on this Certificate of Verification is true and correct.</li> <li>I am the certified HERS Rater who performed the verification identified and reported on this Certificate of Verification (responsible rater).</li> <li>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.</li> <li>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.</li> <li>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.</li> </ol>	
<b>BUILDER OR INSTALLER INFORMATION AS SHOWN ON THE CERTIFICATE OF INSTALLATION</b>	
Company Name (Installing Subcontractor, General Contractor, or Builder/Owner):	
Responsible Builder or Installer Name:	CSLB License:
<b>HERS PROVIDER DATA REGISTRY INFORMATION</b>	
Sample Group Number (if applicable):	Dwelling Test Status in Sample Group (if applicable)
<b>HERS RATER INFORMATION</b>	
HERS Rater Company Name:	
Responsible Rater Name:	Responsible Rater Signature:
Responsible Rater Certification Number w/ this HERS Provider:	Date Signed:

**NRCV-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 CF1R.
3. Project Scope: This field is filled out automatically and referenced from the CF1R.
4. Total Kitchen Floor Area: Enter the total floor area for an enclosed kitchen or N/A for a non-enclosed kitchen.
5. Kitchen Average Ceiling Height: Enter the kitchen ceiling height for an enclosed kitchen or N/A for a non-enclosed kitchen.
6. Kitchen Total Conditioned Volume: This field is filled out automatically and calculated based on the kitchen area and ceiling height.
7. Kitchen Type: Enter the type of kitchen (enclosed or non-enclosed).

**Section C. Kitchen Exhaust System**

1. Manufacturer Name: Enter manufacturer name for the kitchen exhaust system.
2. System Type: Select the type of kitchen exhaust system. Options are vented range hood, downdraft, and other.
3. HVI Directory Listed Model Number: Enter the kitchen exhaust system model number matching the installed equipment and HVI directory.
4. HVI Directory Listed Rated Airflow: Enter the rated airflow listed in the HVI directory for the above model number.
5. HVI Directory Listed Sound Rating: Enter the sound rating listed in the HVI directory for the above model number.
6. Minimum Airflow (if different than rated airflow): Defaults to rated airflow from HVI directory, but editable if exhaust system minimum airflow rate is different than HVI listed value.
7. Operation Schedule: Select the kitchen exhaust system operation schedule. Options are demand control and continuous.
8. Required Minimum Ventilation Rate: This field is filled out automatically and is calculated based on the system operation schedule and type, and kitchen type.
9. Maximum Sound Rating: This field is filled out automatically and is calculated based the system operation schedule.
10. Compliance Statement: This field is filled out automatically based on the installed system HVI listed airflow rate and the minimum required ventilation rate.

**Section D. Other Requirements**

1. 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. *Verification Status*: If this Section does not apply, then select "All N/A". If the system meets the criteria for *Ducts Located in Conditioned Space* credit then select "Pass", otherwise select "Fail". The latter selection means that the system does not meet the requirements and the CF1R will have to be revised, or the system will need to be modified to meet the requirements.
8. *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.