|  |
| --- |
| 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 | | | | | |
|  | | 300 cfm | | Other Kitchen exhaust fans, including downdraft in *Nonenclosed* kitchens | | | | | |
| Bathroom | | 50 cfm | |  | | | | | |
| **Table 5.2**  **Continuous Local Ventilation Exhaust Airflow Rates** | | | | | | | | | |
| **Application** | | **Airflow** | | **Notes** | | | | | |
| Enclosed Kitchen | | 5 ACH | | Based on kitchen volume. | | | | | |
| Bathroom | | 20 cfm | |  | | | | | |
| **Table 5.3**  **Prescriptive Duct Sizing Requirements** | | | | | | | | | |
| Duct Type | Flex Duct | | | | | Smooth Duct | | | |
| Fan Rating cfm @ 0.25 in. w.g. | 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. | | | | | | | | | |

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **C. Kitchen Exhaust Systems** | | | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
| System Name | Manufacturer Name | System Type | HVI Directory Listed Model Number | HVI Directory Listed Rated Airflow | HVI Directory Listed Sound Rating | Minimum Airflow (defaults to rated airflow) | Operation Schedule | Required Minimum Ventilation Rate (if demand controlled) | Maximum Sound Rating | Compliance Statement |
|  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **D. Continuous Kitchen Exhaust** | | |
| 01 | Total Continuous Ventilation Airflow |  |
| 02 | Required Minimum Continuous Ventilation Airflow |  |
| 03 | Compliance Statement |  |



|  |  |
| --- | --- |
| **E. Other Requirements** | |
| *The items listed below correspond to the information given in ASHRAE 62.2 sections 5 and 7. 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.** | |

|  |  |  |  |
| --- | --- | --- | --- |
| **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** | | | |
| I certify the following under penalty of perjury, under the laws of the State of California:The information provided on this Certificate of Installation is true and correct.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.  1. 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. 2. 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. 3. I will ensure 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. 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. | | | |
| 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): | | |

**CF2R-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. 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).

**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 Directory Listed Model Number: Enter the kitchen exhaust system model number matching the installed equipment and HVI directory.
5. HVI Directory Listed Rated Airflow: Enter the rated airflow listed in the HVI directory for the above model number.
6. HVI Directory Listed Sound Rating: Enter the sound rating listed in the HVI 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.
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. This field is only used for demand control exhaust systems. Continuous exhaust required minimum ventilation rate is determined in Section D.
10. Maximum Sound Rating: This field is filled out automatically and is calculated based the system operation schedule and minimum airflow.
11. Compliance Statement: This field is filled out automatically based on the installed system HVI listed airflow rate and sound rating, minimum required ventilation rate, and maximum sound rating. For continuous systems, this field only determines compliance with maximum sound ratings. Continuous system ventilation rate compliance is determined in Section D.

**Section D. Continuous Kitchen Exhaust**

1. Total Continuous Ventilation Airflow: This field is filled out automatically and is equal to the sum of the HVI 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 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.

|  |
| --- |
| 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 subject to the amendments specified by Title 24, Part 6, Section 150.0(o)1. |

|  |  |  |
| --- | --- | --- |
| **A. Local Mechanical Exhaust - General Information** | | |
| 01 | Dwelling Unit Name | <<Calculated field, referenced data from MCH-01, “Dwelling Unit Name” (A01)CF1R.>> |
| 02 | Building Type | << calculated field, referenced data from CF1R, allowed values = multifamily, single family detached, or single family attached>> |
| 03 | Total Kitchen Floor Area | <<User Entered Value; (XX.XX) or N/A>> |
| 04 | Kitchen Average Ceiling Height | <<User Entered Value; (XX.XX) or N/A>> |
| 05 | Kitchen Total Conditioned Volume | <<calculated value, “Kitchen Floor Area (A03)” \* “Kitchen Average Ceiling Height” (A04); (XX.XX);  Allow N/A only if A03 and A04 = N/A>> |
| 06 | Kitchen Type | User Entry, selections (Enclosed or Non-Enclosed) |

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **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 | | | | | |
|  | | 300 cfm | | Other Kitchen exhaust fans, including downdraft in *Nonenclosed* kitchens | | | | | |
| Bathroom | | 50 cfm | |  | | | | | |
| **Table 5.2**  **Continuous Local Ventilation Exhaust Airflow Rates** | | | | | | | | | |
| **Application** | | **Airflow** | | **Notes** | | | | | |
| Enclosed Kitchen | | 5 ACH | | Based on kitchen volume. | | | | | |
| Bathroom | | 20 cfm | |  | | | | | |
| **Table 5.3**  **Prescriptive Duct Sizing Requirements** | | | | | | | | | |
| Duct Type | Flex Duct | | | | | Smooth Duct | | | |
| Fan Rating cfm @ 0.25 in. w.g. | 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. | | | | | | | | | |



|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **C. Kitchen Exhaust Systems** | | | | | | | | | | |
| 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 10 | 11 |
| System Name | Manufacturer Name | System Type | HVI Directory Listed Model Number | HVI Directory Listed Rated Airflow | HVI Directory Listed Sound Rating | Minimum Airflow (defaults to rated airflow) | Operation Schedule | Required Minimum Ventilation Rate (if demand controlled) | Maximum Sound Rating | Compliance Statement |
| <<User Entered Value up to 50 characters>> | <<User Entered Value up to 50 characters>> | <<User Entered Value; Selections = (Vented Range Hood, Downdraft, Other)>> | <<User Entered Value up to 50 characters>> | <<User Entered Value; (XXXX.XX)>> | <<User Entered Value; (XX.XX)>> | <<Defaults to C05  otherwise, User Entered Value; (XXXX.XX); Not to exceed C05 (rated airflow)>> | <<User Entry; Selections = (Demand Control, Continuous)>> | <<If C08 = Demand Control and C03 = Vented Range Hood, then Result = “100 cfm”;  Else If C08 = Demand Control, A06 = Enclosed, and C03 = Other or Downdraft, then Result = lesser of 300 cfm and 5\*A05/60;  Else If C08 = Demand Control, A06 = Non-Enclosed, and C03 = Other or Downdraft, then Result = 300;  Else If C08 = Continuous, then Result = “N/A – See Table D” | <<If Continuous, then value = “1 sone”;  ElseIf Demand Control and C07 ≤ 400 cfm, then value = “3 sone”;  Else value = “N/A”>> | <<If C08 = ‘Demand Control’,  and C05 (HVI Directory Listed Rated Airflow) ≥ C09 (Required Minimum Ventilation Rate),  and C06 ≤ C10,  then display text: "Complies”;  If C08 = Continuous,  and C06 ≤ C10,  then display text: "Complies”;  else display text: "Does Not Comply"  >> |
|  |  |  |  |  |  |  |  |  |  |  |

|  |  |  |
| --- | --- | --- |
| **D. Continuous Kitchen Exhaust** | | |
| 01 | Total Continuous Ventilation Airflow | <<Result = Sum(C05 for all C08 = Continuous) {sum ‘listed rated airflow’ for all continuously operated fans};  Else result = “N/A”>> {want this entry to be N/A if there are no continuously operated fans} |
| 02 | Required Minimum Continuous Ventilation Airflow | <<If D01 = N/A, then result = “N/A”,  Else result = 5\*A05/60>> |
| 03 | Compliance Statement | <<If D01 = N/A, then result = “N/A”;  Else if D01 ≥ D02 then result = “Complies”, else result = “Does Not Comply” |

|  |  |
| --- | --- |
| **E. Other Requirements** | |
| *The items listed below correspond to the information given in ASHRAE 62.2 sections 5 and 7. 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.** | |

|  |  |  |  |
| --- | --- | --- | --- |
| **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/CEPE/HERS certification identification (if applicable): | |
| City/State/Zip: | | Phone: | |
| **Responsible Person's Declaration statement** | | | |
| I certify the following under penalty of perjury, under the laws of the State of California:The information provided on this Certificate of Installation is true and correct.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.  1. 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. 2. 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. 3. I will ensure 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. 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. | | | |
| 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): | | |