Pikes Peak REGIONAL Building Department

RESIDENTIAL HVAC EQUIPMENT CERTIFICATE - 2024 IECC/2023 PPRBC

Provide this certificate with heat loss, or optional heat gain, calculations for all new residential construction and additions. This form is part of the permanent record.

ADDRESS OR MASTER PLAN #: _____

☐ Duct Design ☐ New Structure ☐ Existing Structure

☐ New Addition Only ☐ Existing structure + New Addition (requires separate calculation for each)

CALCULATIONS:

1. Envelope heat loss _____ BTU/hr
2. Infiltration heat loss (.35 ach max) _____ BTU/hr
3. Envelope heat gain (optional) _____ BTU/hr
4. Infiltration heat gain (optional) _____ BTU/hr
5. Total heat loss (add lines 1 and 2)** _____ BTU/hr
6. Total heat gain (add lines 3 and 4 - optional) _____ BTU/hr
7. Type of heating appliance _____ ☐ New ☐ Existing
   BTU/hr input _____ / _____ Location _____ Area served _____
8. Type of heating appliance _____ ☐ New ☐ Existing
   BTU/hr input _____ / _____ Location _____ Area served _____
9. Type of cooling appliance _____ ☐ New ☐ Existing
   BTU/hr input _____ / _____ Location _____ Area served _____
10. Type of cooling appliance _____ ☐ New ☐ Existing
    BTU/hr input _____ / _____ Location _____ Area served _____

SUMMARY:

A. Input of heating appliance(s)* _____ BTU/hr
B. Altitude derate **(x .80)** *NOTE: Use* **(x .72)** *in Woodland Park* _____ BTU/hr
C. Efficiency derate (output) _____ BTU/hr
D. Electrical heating (1 watt = 3.413 BTU/hr) _____ BTU/hr
E. **Total Heating Output**** _____ BTU/hr
F. **Total Cooling** _____ BTU/hr

*If using high/low fired equipment, assign sum of the low fires on this line.

Applicant Signature _____ Date _____

Print name & company _____ Phone _____

IECC/IRC VENTILATION VERIFICATION (New Homes Only)

- Indicate method of compliance for ***Whole-House Mechanical Ventilation System*** *(M1505 & M1505.4.3)* (select all that apply)

  ☐ **Outside Air/Supply** ☐ **Exhaust**

- List ***Fan Type/Description, CFM, and Location*** of **ALL** exhaust fans, *including kitchen hoods and outside air*. Check box if fan is part of Whole-house Mechanical Ventilation System.

  (Example: *Exhaust fan, 120 CFM, Master Bathroom [x]*)

_____ ☐

_____ ☐

_____ ☐

_____ ☐

_____ ☐

- Indicate ***Whole House Mechanical Ventilation Control*** (select one):

  ☐ Continuous ☐ Intermittent Location: _____ (or TBD)

- Indicate ***Bathroom and Toilet Room Ventilation Controls***: ☐ Continuous ☐ Intermittent

  If intermittent, list which minimum control operation will be used to meet 2024 IECC R403.6.5:

  _____

MECHANICAL VENTILATION RATE CALCULATION METHOD (choose one):

1) Indicate the minimum CFM required for this residence using either Table **M1505.4.3(1)** or Equation 15-1:

TABLE M1505.4.3(1)
CONTINUOUS WHOLE-HOUSE MECHANICAL VENTILATION SYSTEM AIRFLOW RATE REQUIREMENTS

DWELLING UNIT FLOOR AREA (square feet)	NUMBER OF BEDROOMS				
	0–1	2–3	4–5	6–7	> 7
	Airflow in CFM				
< 1,500	30	45	60	75	90
1,501–3,000	45	60	75	90	105
3,001–4,500	60	75	90	105	120
4,501–6,000	75	90	105	120	135
6,001–7,500	90	105	120	135	150
> 7,500	105	120	135	150	165

For SI: 1 square foot = 0.0929 m^2, 1 cubic foot per minute = 0.0004719 m^3/s.

Equation 15-1 to calculate the ventilation rate in cubic feet per minute:

Eq. 15-1: (0.01 x $\frac{\text{_____ s.f.}}{\text{Total Area of House}}$) + (7.5 x ($\frac{\text{___}}{\#}$ bedrooms +1)) = _____ CFM

2) If ventilation control is intermittent, indicate in table below which rate factor is being used.

TABLE M1505.4.3(2) INTERMITTENT WHOLE-HOUSE MECHANICAL VENTILATION RATE FACTORS[a, b]

RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT	25%	33%	50%	66%	75%	100%
Factor[a]	4	3	2	1.5	1.3	1.0

a. For ventilation system run-time values between those given, the factors are permitted to be determined by interpolation.
b. Extrapolation beyond the table is prohibited.