

# 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. Check box if fan is part of Whole-house Mechanical Ventilation System.

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

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- 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:

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**MECHANICAL VENTILATION RATE CALCULATION METHOD (choose one):**

- Table **M1505.4.3(1)**. Indicate in table below the minimum CFM required for this residence:

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<sup>2</sup>, 1 cubic foot per minute = 0.0004719 m<sup>3</sup>/s.

- 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<sup>a, b</sup>

RUN-TIME PERCENTAGE IN EACH 4-HOUR SEGMENT	25%	33%	50%	66%	75%	100%
Factor <sup>a</sup>	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.

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

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