

Town of North Castle Building Department

17 Bedford Road

Armonk, New York 10504-1898

Telephone: (914) 273-3000 ext. 44 Fax: (914) 273-3554

RESIDENTIAL HVAC EQUIPMENT DESIGN WORKSHEET HEATING AND COOLING EQUIPMENT

House Address: _____ Permit #: _____ Date: _____

Permit Applicant: _____ Phone: _____

Requirements:

- ☐ **R403.1.1** All thermostats are programmable
- ☐ **R403.3.1** Ducts in unconditioned spaces are insulated
 - ≥ 3" diameter insulated to ≥ R-8 in attics and ≥ R-6 elsewhere
 - < 3" diameter insulated to ≥ R-6 in attics and ≥ R-4.2 elsewhere
- ☐ **R403.3.2.1** Air handler has manufacturer's designation of ≤ 2% air leakage when tested per ASHRAE 193
- ☐ **R403.3.3** Completed ***Duct and Envelope Testing Form*** will be submitted to the inspector
- ☐ **R403.4** HVAC pipe insulation is R-3 minimum (e.g. hydronic systems, refrigerant lines) and outdoor insulation is protected
- ☐ **R403.7** Manual J report, including heating and cooling design loads, is attached
- ☐ **R403.7** Heating and cooling equipment have been selected in accordance with Manual S, based on loads calculated in accordance with Manual J (see below)

Complete the following based on the attached Manual J report:

Design loads:

Design cooling load _____ (Btu/h)

Design heating load: _____ (Btu/h)

Equipment specifications:

Cooling system output capacity _____ (Btu/h)

Cooling equipment make: _____

Cooling equipment model: _____

Heating system output capacity: _____ (Btu/h)

Heating equipment make: _____

Heating equipment model: _____

- ☐ **Manual S.** Specified *cooling* equipment capacity is ≤ 1.15 times the design load or the next larger nominal size, whichever is greater. (Exception: Heat pumps may exceed the design load by 1.25 times or the next nominal size.)
- ☐ **Manual S.** Specified *heating* equipment capacity is ≤ 1.40 times the design load or the next larger nominal size, whichever is greater

- ☐ **RCNYS R303.4** Whole-house mechanical ventilation worksheet has been completed (see page 2)

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RESIDENTIAL HVAC DESIGN FORM WHOLE HOUSE MECHANICAL VENTILATION DESIGN WORKSHEET

House Address: _____ Permit #: _____ Date: _____

Permit holder: _____ Phone: _____

1. Fill in the conditioned floor area and number of bedrooms for the dwelling:

Conditioned Floor Area = _____ ft²

Number of bedrooms = _____

2. Circle the required airflow value on the table below:

[NY] RCNYS 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

3. Does the fan operate continuously or intermittently?

☒ Continuous

☐ Intermittent

- 4. If the fan is to be operated intermittently on a pre-set schedule,** multiply the airflow value from Table M1505.4.3 (above) by the appropriate value in Table M1505.4.3(2) (below).

[NY] RCNYS Table M1505.4.3(2)

Intermittent Whole-House Mechanical Ventilation Rate Factors

Run-time Percentage in Each 4-hour Segment	25%	33%	50%	66%	75%
Factor	4.0	3.0	2.0	1.5	1.3

5. Enter the required airflow = _____ CFM

6. R403.6.1. Fan efficacy. Enter the following information regarding the specified fan:

Rated fan airflow = _____ CFM

Fan make: _____

HVI-rated fan efficacy = _____ CFM/Watt